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Items for discussion and decision

Handbook of Statistical Organization

Report of the Secretary-General

Summary

The present report was prepared in accordance with Economic and Social Council decision 2017/228 and past practices. The need for statistical organizations to adapt to the widening, increasing and evolving needs of data users, new data sources and the latest technological developments and develop was stressed in the Cape Town Global Action Plan for Sustainable Development Data and the final report of the series of conferences on a transformative agenda for official statistics. In the 2030 Agenda for Sustainable Development, Member States indicated that high-quality, timely and disaggregated statistics were needed to meet to new data needs and emerging challenges. The annex to the present report includes an outline for the fourth edition of the *Handbook of Statistical Organization* that contains comments on the strategic development areas relating to those initiatives, on the basis of consultations with chief statisticians and senior managers of statistical organizations.

Points for discussion by the Statistical Commission are contained in paragraph 25 of the report.

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I. Introduction

1. The need for statistical organizations to adapt and develop was stressed in the Cape Town Global Action Plan for Sustainable Development Data (see E/CN.3/2017/3) and the final report of the series of conferences on a transformative agenda for official statistics (E/CN.3/2017/5), both of which were submitted to the Statistical Commission at its forty-eighth session (see E/CN.3/2017/35). The monitoring of the 2030 Agenda for Sustainable Development and related regional and national development policies requires national statistical systems to grasp the potential of innovative technologies in a rapidly changing data ecosystem while reinforcing leadership, coordination, communication and dialogue through institutional and organizational reforms, in compliance with the Fundamental Principles of Official Statistics, endorsed by the General Assembly in 2014. Modernization and transformation are crucial if official statistics are to meet the widening and increasing requirements of policymakers, researchers, the media and civil society for high-quality, timely and disaggregated statistics.

2. Considering those circumstances, the Statistical Commission agreed, at its forty-eighth session (see E/2017/24, decision 48/103), with the proposed update of the *Handbook of Statistical Organization* (the *Handbook*), the primary objective of which is to guide chief statisticians and senior managers of statistical organizations in developing and maintaining statistical capacity that is fit for purpose. The Commission required that the updated version of the *Handbook*, which was first published in 1954, and whose most recent (third) edition was issued in 2003, consider the strategic development areas proposed in the Cape Town Global Action Plan for Sustainable Development Data and the main outcomes of the series of conferences on a transformative agenda for official statistics, in particular, the following:

(a) Institutional and organizational frameworks securing resilience and the adaptability of official statistics;

(b) Communication, advocacy and multi-stakeholder partnerships for official statistics;

(c) Production processes and data sources for integrated production systems in official statistics;

(d) Information technology infrastructure to support data collection and the sharing, processing and dissemination of official statistics;

(e) Quality assurance framework and quality policy and management in official statistics;

(f) Capacity-building, training and resource mobilization in official statistics.

3. The process of updating the *Handbook* was divided into two segments. It was decided that, the first segment would involve developing an outline, with comments, for the next (fourth) edition of the *Handbook*, on the basis of a review of the third edition; consultation rounds would be held within the framework of the regional and subregional capacity-building workshops of the Statistics Division of the Department of Economic and Social Affairs of the Secretariat; and an online survey would be conducted among chief statisticians between September and October 2017. During the survey and consultation rounds, the focus was placed on the structure to be followed in the updated *Handbook*, major recent developments, the priorities to be reflected in the updated version and other issues, such as electronic dissemination versus paper publication and available languages.

4. In the second segment of the update process, scheduled for after March 2018, it was decided that the updated version would be drafted, using the outline and the outcome of the discussion and guidance provided by the Commission at its forty-ninth session.

5. The purpose of the present report is to provide the Commission, at its forty-ninth session, with points for discussion and guidance regarding the results of the first segment of the updating process, as follows: the factors shaping the update and the outcome of user consultations are set out in section II; a summary of the content of each chapter in the proposed new structure is set out in section III; and the proposed next steps of the update process are set out in section IV.

6. The annex to the present report contains an outline, with comments, of the proposed structure of the *Handbook*.

II. Factors shaping the update of the *Handbook* and outcome of user consultations

7. Since the publication of the third edition, in 2003, there have been many developments in the organization and production of official statistics that should be addressed in an updated version. The outcome of the review and consultation rounds and the results of the survey conducted among chief statisticians revealed the need for the following:

(a) Increased focus on the implementation of the Fundamental Principles of Official Statistics, both within the national statistical offices and among other producers of official statistics within the national statistical systems;

(b) Increased focus on the national statistical system, not just the national statistical office, and the need for coordination among national statistical system members;

(c) Increased focus on the systematic reuse and exchange of data;

(d) Better understanding of technological developments that have significant implications for data collection, handling and dissemination;

(e) That producers of official statistics take into consideration new data needs at the national and international levels.

Review of the target audience, structure and content of the third edition of the *Handbook*

8. A review of the third edition, aimed at identifying areas to be updated and improved and how to best adapt the structure and content to meet the new requirements, resulted in the following conclusions:

(a) The *Handbook* should not be designed as a narrative story, but rather as a checklist that a statistical agency should take into consideration. The chapters should be able to be read independently;

(b) The *Handbook* should provide clear and firm guidance, but not be prescriptive as the situation in each country is unique and only those in the country can determine the usefulness of the guidance;

(c) The *Handbook* should contribute to the harmonization and alignment of concurring definitions and terminology that have emerged recently through various, and sometimes uncoordinated, initiatives and programmes at the global and regional levels;

(d) Most of the chapters and sections, especially those relating to information technology, would have to be completely rewritten.

(e) The structure of the *Handbook*, namely, the division of the material into chapters and the sequence of the chapters, should be fundamentally revised to reflect the emerging topics and issues to be covered and the relevant international standard, as detailed below.

9. The primary target audience of the updated edition of the *Handbook* are chief statisticians and senior managers. With the revised approach, however, it will be possible to address a wider range of users and stakeholders at all levels within and outside the national statistical system. This will provide an opportunity to develop a mutual understanding of official statistics and a common statistical culture. Drafters of the new *Handbook* should also take into consideration the fact that national statistical offices vary greatly in terms of their size and development. As with the third edition, the approach is to present general principles that appear to have withstood the test of time, location, tradition and legal context and to illustrate them using national examples and practices.

Accessibility, readability, usability and ease of the update

10. It became clear through the consultation process that the updated *Handbook* should be conceived as a living document available on the Internet; serve as a wiki-style resource that was easily accessible; include links to relevant material available on the Internet; invite a discussion of issues; and be able to be readily updated. To ensure an efficient structure, including with regard to using the links, it was proposed that a pilot chapter be drafted as a guide for developing the other chapters. The pilot chapter might also serve as an experiment in ways to search mechanisms, and keywords could be incorporated to facilitate the use of the updated *Handbook* as a toolkit for training purpose and for providing answers to different issues.

11. It was suggested that a procedure be put in place for the regular update of the *Handbook*, that each version of updates be marked clearly and that the frequency of the updates for each chapter be fixed, for instance, every second year. Furthermore, a decision should be taken with regard to which languages should be made available in the Internet version.

12. It was foreseen during the consultation process that a hard-copy version of the *Handbook* would be limited to the overview chapter (chapter II). The print version would be made available in all the official languages of the United Nations and would be aimed at policymakers and other stakeholders in addition to national statistical offices and other members of national statistical systems. It was also proposed that the other chapters, available exclusively online, be made print-friendly.

Reference initiatives, guidelines and material

13. The updated *Handbook* will address common challenges, including those relating to the production and utilization of the indicators for monitoring progress

towards the Goals and targets of the 2030 Agenda, on the basis of institutional principles, managerial practices, and innovative production processes and technologies that have been acknowledged internationally and implemented successfully. The updated *Handbook* will, to the extent possible, rely on relevant global, regional and subregional initiatives such, as the deliverables and recommendations of the High-level Group for Partnership, Coordination and Capacity-Building for Statistics for the 2030 Agenda for Sustainable Development, the work of the High-level Group for the Modernisation of Official Statistics, the revision of the generic National Quality Assurance Framework and its guidelines and the review of the current implementation guidelines for the Fundamental Principles of Official Statistics.

14. Before starting with the drafting of the chapters of the *Handbook* according to the above-mentioned priorities, an inventory should be compiled, at the national, regional and global levels, of innovative initiatives, reference material and guidelines and country experiences, which should be duly reflected in the updated version.

III. Proposed structure and content of the updated *Handbook*

15. It was suggested that the Generic Activity Model for Statistical Organizations (GAMSO)[1] be used as the overall architecture of the updated *Handbook*. To quote from its introductory sections, GAMSO describes and defines the activities that take place within a typical statistical organization. It extends and complements the Generic Statistical Business Process Model (GSBPM) by providing additional activities needed to support statistical production. It is aimed at providing a common vocabulary and framework to support international collaboration activities, in particular in the field of modernization. Nevertheless, as GAMSO is a relatively new standard that does not have the maturity of GSBPM,[2] it was proposed that it provide guidance in the choice of structure rather than being a standard that must be followed strictly.

16. GAMSO comprises three hierarchical levels. The top level includes four broad activity areas, three of which are further articulated at a second level, as follows:

(a) **Strategy and leadership.** This includes, at the second level: (i) defining vision; (ii) governing and leading; and (iii) managing strategic collaboration and cooperation;

(b) **Capability development.** This includes, at the second level: (i) planning capability improvement; (ii) developing capability improvement; (iii) monitoring capabilities; and iv) supporting a capability implementation plan;

(c) **Corporate support.** This includes, at the second level: (i) managing business and performance; (ii) managing finances; (iii) managing human resources; (iv) managing information technology; (v) managing statistical methodology; (vi) managing information and knowledge; (vii) managing consumers; (viii) managing data suppliers; (ix) managing buildings and physical space; and (x) managing quality;

(d) **Production.** This is in accordance with GSBPM.

[1] GAMSO was endorsed by the Conference of European Statisticians at it sixty-fifth plenary session (see ECE/CES/2017/11). See also: https://statswiki.unece.org/display/GAMSO/GAMSO+v1.1.

[2] GSBPM was endorsed by the Conference of European Statisticians at it sixty-fifth plenary session (see ECE/CES/2017/11). See also: https://statswiki.unece.org/display/GSBPM/GSBPM+v5.0.

17. The second levels were used as a starting point for the chapters of the *Handbook*, but were then significantly modified because GAMSO is a model for an individual national statistical office and the *Handbook* covers the entire national statistical system. The third level of GAMSO, which includes further description of the second level, has been used as a broad reference.

18. The resulting structure of the updated *Handbook* comprises 16 chapters. The first two chapters contain an outline of the objectives, intended audience and main themes of the *Handbook*. Chapter II provides an overview of the *Handbook* and is sufficiently comprehensive and self-contained to be printable as a small booklet. Chapters III to VI, cover the basis for official statistics, the national statistical system, the national statistical office and user needs. Chapters VIII to X cover statistical production, including data collection, processing, analysis and dissemination. Chapters VII and XI to XIV cover all aspects of the statistical infrastructure, including management of quality, human resources, information technology, data and metadata. Chapters XV and XVI provide a description of the management of the physical infrastructure and international activities and collaboration.

19. The annex to the present report contains a detailed outline of the chapters, sections and subsections of the updated *Handbook*.

20. During the consultation rounds conducted in the second half of 2017, the following priorities were suggested for the development of various chapters: chapter VII, quality management; chapter VIII, data sources, collection and processing; chapter IX, analysis and analytical frameworks; chapter X, dissemination and user communication; chapter XI, common statistical infrastructure; chapter XIII, data, information and knowledge management; and chapter XIV, information technology management. It was also proposed that the overview chapter, which has a broader target audience, would be drafted and made available only after the first versions of all the other chapters had been finished.

IV. Next steps

21. The process of drafting the updated version of the *Handbook* will be undertaken in 2018 and 2019 by a drafting team with expertise in all major topics covered by the *Handbook* and according to the priorities and guidance provided by the Statistical Commission at its forty-ninth session. The team, consisting of consultants and led by the Statistics Division of the Department of Economic and Social Affairs of the Secretariat, could be complemented with experts from partner organizations and national statistical agencies, who would be mobilized to draft chapters that require specific experience and knowledge. During the drafting process, chief statisticians, senior managers of statistical organizations and other stakeholders will be consulted within the framework of activities organized through existing global, regional and subregional statistical programmes and capacity-building projects. The aim will be to ensure that there is ample opportunity for feedback during the drafting process.

22. An advisory group will be established with the task, at regular intervals or upon request, of providing overall guidance to the drafting team. It will comprise selected chief statisticians, ensuring a link with the High-level Group for Partnership, Coordination and Capacity-Building for Statistics for the 2030 Agenda for Sustainable Development and other relevant bodies, and a limited number of senior statisticians from regional commissions of the United Nations and multilateral development banks (memorandum of understanding group). It was suggested that the

advisory group not be too large, ideally consisting of not more than 12 members. The drafting team may also seek support and guidance from other bilateral and multilateral partner organizations outside the advisory group, if needed.

23. This approach will be complemented by a series of thematic conferences at the regional and subregional levels, if needed, at which senior statisticians may consider recent institutional, organizational and technical developments addressing prospective challenges and opportunities. The objective will be to assess whether there is enough insight and positive implementation feedback incorporated into the *Handbook*.

24. At its fiftieth session, the Statistical Commission will be informed of and consulted on the drafted chapters and the work in progress.

V. Points for discussion

25. **The Commission is invited to:**

(a) **Comment on the proposed structure and content of the updated *Handbook* and express its views on chapters to be drafted as a priority;**

(b) **Express its views on the organization of the drafting procedure and consultation mechanisms;**

(c) **Comment on the proposal to put the updated *Handbook* on an interactive Internet platform, targeting chief statisticians and senior managers of statistical organizations, complemented by a hard-copy version of the overview chapter (chapter II), aimed at a broader audience within and outside the national statistical system.**

Annex

Proposed structure of the updated *Handbook*

Chapter	*Section*	*Subsection*	*Description*	*Comments*
			Preface	
			Contents	
			Figures	
			Abbreviations	
I.			**Introduction**	
			Chapter I covers the objectives, intended audience, structure and content of the *Handbook*.	
	A		**Motivation for updating the *Handbook***	• Changes since 2003, especially technology • Current themes: transformation of national statistical offices, sustainable development
	B		**Purpose, users and uses of *Handbook***	• Target audience: chief statisticians, heads of other agencies producing statistics plus a wider range of users and stakeholders relating to official statistics • Reference manual covering all aspects the activities under their direction • For large and small national statistical offices • For developed and developing countries
	C		**Main topics discussed**	• General principles and policies • Illustrated by examples • Citing international standards and guidelines, wherever available
	D		**Key concepts and terminology**	• National statistical office and national statistical system • Official statistics
	E		**Structure and content of *Handbook***	• Stand-alone chapters linked to one another • Live links to key reference documents with more details • Loosely based on GAMSO • Overview • General outline of national statistical system and of national statistical office

Chapter	Section	Subsection	Description	Comments
				• Main uses and users of statistics • Sources, data acquisition and provider relations • Processing and analysis • Dissemination and user communications • Common statistical infrastructure • Human resources management, information management, information technology management • International activities • Quality management

II. Overview

Chapter II comprises a stand-alone summary of the major topics covered in the *Handbook*. The chapter will be available as a printed publication aimed at a broader audience within and outside the national statistical system.

III. Basis of official statistics

Chapter III is aimed at providing a common basis for understanding what should be covered by the designation of official statistics as well as the principles and related legal provisions that may apply.

A		**Introduction**	
B		**Fundamental principles**	• Description taken mainly from Fundamental Principles of Official Statistics (General Assembly resolution 68/261), implementation guidelines, with links to the guidelines provided • Reference can also be made to the six principles of the human rights-based approach to data from the Office of the United Nations High Commissioner for Human Rights
	1	Principle 1	• Relevance and impartiality of and equal access to official statistics
	2	Principle 2	• Professional standards, principles and ethics of official statistics
	3	Principle 3	• Accountability and transparency of official statistics
	4	Principle 4	• Prevention of misuse of official statistics

Chapter	*Section*	*Subsection*	*Description*	*Comments*
		5	Principle 5	• Sources of official statistics
		6	Principle 6	• Confidentiality of official statistics
		7	Principle 7	• Legislation concerning of official statistics
		8	Principle 8	• National coordination of official statistics
		9	Principle 9	• Use of international standards
		10	Principle 10	• International cooperation in statistics
	C		**Legislative frameworks**	
		1	Introduction	• Need for a legislative framework
		2	Types of legislative frameworks	• Main national framework law and by-laws, such as regulations, decrees and orders
				• Who decides what
		3	Relationship between legislation in the field of statistics and other legislation	• Including conflicts regarding access to information and protection of individual data
		4	Topics to be covered in a national law on official statistics	• Definition of official statistics, to be distinguished from administrative information
				• Definition and delineation of producers of official statistics
				• Principle of professional independence of organizations and organizational entities producing official statistics
				• Role of the national statistical office as the main producer of official statistics and the coordinator of the system of official statistics
				• Operational and strategic programming, focusing on existing and emerging user needs
				• Mandate for data collection and access to administrative data and other data sources
				• Principles and procedures for handling confidential statistical data
				• Management of quality
				• Principles for dissemination of official statistics to all relevant user groups; link to model act

Chapter	*Section*	*Subsection*	*Description*	*Comments*

IV. National statistical system

Chapter IV provides a description of the national statistical system and its governance, programmatic and coordination mechanisms and tools.

A		**Introduction**	
B		**Structure of the national statistical system**	
	1	Delimitation of the national statistical system	
	2	Position and role of the central bank	
	3	Legal frameworks, obligations and restrictions	
C		**Coordination of the national statistical system**	
	1	Why coordination?	
	2	Legal basis for coordination	
	3	Coordination mechanisms	• Standards and nomenclatures • Coordination of questionnaires • Rotation of staff • National statistical programmes • National statistical council • Coordinated budgets
D		**Role of the national statistical office and the chief statistician**	
E		**National statistical council**	
	1	Role of the statistical council	
	2	Membership	
	3	Chairmanship	
	4	Secretariat	
	5	Agenda	
	6	Frequency of meetings	
	7	Advisory committees and ad hoc bodies	

Chapter	Section	Subsection	Description	Comments
	F		**Multiannual and annual planning and priority setting**	
		1	Organization of planning activity within the national statistical system	• Role of the national statistical office as a coordinator • Process for developing plans
		2	Which types of plans?	• Strategic, multiannual, annual
		3	Analysing user needs and balancing priorities	• User surveys • Involvement of different actors and the statistical council
		4	Content of the multiannual plan	• Strategic goals for the national statistical system in the next period • Major development work to be undertaken. • Which producers of which surveys? • Legal basis; periodicity, dissemination
		5	Content of the annual plan	• Changes in relation to multiannual plan regarding producers, surveys and development projects
		6	Follow-up and reporting	• Who responsible for what in relation to follow-up and reporting
		7	Authority to take decisions on plans	• Government, ministry, national statistical office, national statistical council
	G		**Branding of official statistics**	• Mechanisms to ensure that the designation "official statistics" is only given to statistics that are in line with the Fundamental Principles of Official Statistics and national requirements
	H		**Financing the national statistical system**	• Common, coordinated government budgets for official statistics or separate budgets for each producer
V.	**National statistical office**			
			Chapter V covers the key features of a national statistical office.	
	A		**Introduction**	
	B		**Vision and goals of the national statistical office**	• Analyse national and international trends and challenges • Define and communicate vision, mission and strategic goals

Chapter	Section	Subsection	Description	Comments
C			**National statistical office as an organization**	
	1		Administrative solution and financing of the national statistical office	• Reporting to which authority? An independent agency? • Financing only through a government budget? • Market prices for goods and services?
	2		Chief statistician	• Qualifications • Terms of office • Appointment and dismissal • Authority of the chief statistician
D			**Statistical business architecture**	
	1		Definition of a statistical business architecture	• Activities undertaken by a statistical organization: conceptualize, design, build and maintain information • Application assets used in the production of statistical outputs
	2		Need for a statistical business architecture	• Driving the information, application and technology architectures for a statistical organization
	3		Common Statistical Production Architecture	• Formally defined business architecture can reference Common Statistical Production Architecture • Describes aspects of their business architecture in common with other producers of official statistics • Enables sharing of components
	4		Generic activity model for statistical organizations	• Introduction of GAMSO • Position of business architecture in GAMSO
	5		Definition of an integrated production system	• Harmonization and integration of statistical production processes • Standards-based (GSBPM, Common Statistical Production Architecture, GSIM, SDMX) • Modular information technology applications across statistical domains

Chapter	Section	Subsection	Description	Comments
		6	Importance of an integrated production system	• Evolving from a fragmented and silo approach towards an integrated systems approach for producing statistical outputs • Governing the common statistical production process and centralized statistical services over time and across countries • Cost-effectiveness • Collaborating in the development and application of common methods and information technology tools • Managing new developments through a robust, flexible and stable platform • Centralized versus decentralized systems
		7	Data-processing life cycle	• Relationship to GSBPM • Data processing life cycle stages
		8	Examples and best practices	
	E		**Governance and leadership**	
		1	Internal decision-making bodies	• Management committee supporting the chief statistician? Tasks and composition?
		2	Internal communication and coordination	• Use of management committee or other coordinating bodies • Relationship with trade unions • Sharing of information and communication through the hierarchy and across the organizational structure • Use of the intranet • Development and communication of internal policies and decisions
		3	Options for organizing the national statistical office	• Organization by subject or by function • Stovepipe or process-oriented organization • Number of divisions and levels • Reorganization: how and when
		4	Central office and regional network	• Division of tasks, relationship with other regional bodies; reorganizing regional networks

Chapter	Section	Subsection	Description	Comments
		5	Planning and monitoring within the national statistical office	• Development of multiannual and annual work programmes; analysis and balancing of user requirements; allocation of project and programme portfolio budgets; evaluation of plans and performance; follow-up
	F		**Planning and development of capabilities**	
		1	Capability management	• Managing human resources capabilities: overview of human resources capability management (summarize and refer to chapter on human resources management)
				• Managing information technology capabilities: overview of information technology capability management (summarize and refer to chapter XIV)
		2	Project management	
	G		**Implementation of support capability**	
			Change management	• Define change management
				• Change management models
	H		**Monitoring of capabilities**	
			Risk management	• Define risk management
				• Risk management principles
	I		**Relevance to other producers of official statistics**	
VI.	**Users and their needs**			
			In this chapter, various groups of users of official statistics and their specific needs are detailed.	
	A		**Introduction**	
		1	Increased demand for statistics (Sustainable Development Goal context)	• Increased demand for data
				• Increased expectations for data access: the age of the "digital native"
				• Specific requirements for the Sustainable Development Goals
		2	Analysis of user needs	• Strategy to assist in identifying and satisfying the needs of different users (public consultations, focus groups, etc.)

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	B		**Needs of Government**	
		1	General needs of Government	• Relationship between Government and the national statistical office
				• Categories of government needs: regular and ad hoc
		2	Ministries of finance	• Data requirements of ministry of finance
				• Examples
		3	Other ministries	• Data requirements of other ministries
				• Examples
		4	Organizing and establishing contacts	• Need for gathering information throughout the national statistical system
				• Establishing links to experts in specialized ministries
				• Establishing links to data in specialized ministries
		5	Regional and local government	• Needs for gathering information in regional and local government
				• Establishing links to experts in regional and local government
				• Establishing links to data in regional and local government
	C		**Needs of general public**	• Specific requirements of the general public
				• Meeting the needs of the general public
	D		**Needs of businesses**	
		1	Large businesses	• Specific requirements of large businesses
				• Meeting the needs of large businesses
		2	Small businesses	• Specific requirements of small businesses
				• Meeting the needs of small businesses
	E		**Needs of education and academia**	• Specific requirements of schools, high schools and universities
				• Meeting the needs of schools and high schools
				• Meeting the needs of universities
	F		**Needs of the media**	• Different types of media
				• Specific requirements of the media
				• Meeting the needs of the media

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	G		**Needs of researchers**	• Specific requirements of researchers
				• Meeting the needs of researchers
	H		**Needs of international institutions**	• Specific requirements of international institutions (refer to chapter XVI)
				• Meeting the needs of international institutions
	I		**Needs associated with the Sustainable Development Goals**	• Specific requirements associated with the production and use of the Sustainable Development Goal indicators
	J		**Relevance to other producers of official statistics**	• Other producers of official statistics
				Meeting the needs of their users

VII. Quality management

Chapter VII describes developing and administering a statistical quality framework, including the use of user satisfaction surveys and the certification and labelling of official statistics.

	A		**Introduction**	• Reasons for quality management
				• Structure and content of the chapter
				• General quality management systems
				• Statistical quality management frameworks
				• Promoting a culture that ensures quality
	B		**General quality management systems**	
		1	ISO 9000 series	• Total quality management concepts, principles and terminology
				• Certification process
				• Use by national statistical office
		2	ISO 20252:2012 market, opinion and social research	• Scope, concepts and coverage
				• Use by national statistical office
		3	Six Sigma	• Scope, concepts and coverage
				• Use by national statistical office
		4	Lean	• Scope, concepts and coverage
				• Use by national statistical office

Chapter	Section	Subsection	Description	Comments
		5	European Foundation for Quality Management	• Scope, concepts and coverage • Use by national statistical office
		6	Other general quality management systems	• Scope, concepts and coverage • Use by national statistical office
	C		**Statistical quality assurance frameworks**	
		1	United Nations National Quality Assurance Framework	• Scope, concepts and coverage • Use by national statistical office
		2	European Statistics Code of Practice and Quality Assurance Framework of the European Statistical System	• Scope, concepts and coverage • Use by national statistical office
		3	International Monetary Fund Data Quality Assessment Framework	• Scope, concepts and coverage • Use by national statistical office
		4	Other statistical quality assurance frameworks	• Scope, concepts and coverage • Use by national statistical office
	D		**Developing a statistical quality framework**	
		1	Defining the dimensions of statistical quality	• Output-quality dimensions • Process-quality dimensions • Institutional dimensions of quality • Quality of national statistical system coordination
		2	Creating and maintaining a culture that ensures and promotes statistical quality	• Promoting quality • Quality training programme
		3	Developing guidelines on statistical quality	• Process-oriented guidelines • Process-oriented checklist • Output-oriented checklist
		4	Monitoring and control of statistical quality	• Defining quality and performance indicators • Monitoring quality and performance indicators • Defining and implementing quality gates (control points) • Disseminating quality indicators

Chapter	Section	Subsection	Description	Comments
		5	Evaluating statistical quality	• Conducting a statistical quality review programme • Defining and implementing quality improvements • Disseminating main results to users
		6	Certifying statistical quality	• Certifying official statistics on the basis of an evaluation of quality
	E		**Implementation of a statistical quality framework**	
		1	Need for a statistical quality assurance unit and a statistical quality assurance manager	• Some national statistical offices are too small to have a dedicated statistical quality assurance unit but need a designated statistical quality assurance manager
		2	Need for a statistical quality assurance committee	• Need to ensure that results and recommendations from statistical quality reviews are implemented
		3	Role of national statistical office staff	• Ensuring quality is everyone's business
	F		**Relevance to other producers of official statistics**	• Dimensions of quality • Statistical quality guidelines • Statistical quality review programme • Certification of official statistics

VIII. Data sources, collection and processing

Chapter VIII examines the collection and processing of data from various types of sources, including secondary and non-traditional.

	A		**Introduction**	• Structure and contents of the chapter • Sources: surveys, administrative sources, geospatial data sources, big data sources • Statistical processes: surveys, administrative data-based processes, big data-based processes • Modelling statistical processes with reference to GSBPM
	B		**Surveys and censuses**	
		1	Description of survey functions	• Phases and subprocesses constituting a survey • Types of statistical units that can be subject to the survey

Chapter	*Section*	*Subsection*	*Description*	*Comments*
		2	Survey types	• Household surveys
				• Business enterprise surveys
				• Establishment surveys
				• Price surveys
		3	Data collection and capture modes	• Personal interview using paper questionnaire
				• Self-completion using paper questionnaire
				• Computer-assisted personal interview
				• Computer-assisted telephone interview
				• Self-completion using electronic questionnaire
				• Machine-to-machine transfer
				• Appropriate choice of mode
		4	Survey design	• Frame and sample design
				• Questionnaire design
				• Editing and imputation
				• Estimation
				• Confidentiality preservation
				• Seasonal adjustment
		5	Respondent relations and communications	• Respondent policy and charter
				• Managing key respondents, business profiling
				• Minimizing response errors
				• Minimizing non-response, follow-up procedures
				• Use of the law to enforce response
				• Measuring the response burden, individual and total
		6	Processing survey and administrative data	• Point of collection editing
				• Point of collection coding
				• Primary editing
				• Secondary editing

Chapter	*Section*	*Subsection*	*Description*	*Comments*
				• Coding
				• Imputation
				• Outlier detection and treatment
				• Macro-editing, namely, editing on the basis of a review of aggregated data
		7	Designing integrated survey programmes	• Integrated suite of surveys
				• Core survey vehicles and supplementary modules
				• Flexible survey-taking capability
				• Responding to urgent requests
		8	Survey staff expertise	• Survey managers
				• Subject matter specialists
				• Methodologists
				• Data collection and follow-up specialists
				• Data capture, verification and editing process
	C		**Administrative sources**	
		1	Types of administrative data	• Taxation data
				• Employment data
				• Social Security data
				• Foreign trade data
				• Health data
				• Justice data
				• Corporation register and business licenses
				• Other administrative sources
		2	Working with administrative data providers	• Policy regarding administrative data providers
				• Establishment of memorandum of understanding regarding flows of data and metadata and communications
				• Early warning of impending change in administrative process
				• Promotion of statistical standards
				• Guidance on and supporting data quality

Chapter	*Section*	*Subsection*	*Description*	*Comments*
		3	Accessing administrative data	• Push method: administrative source sends data to national statistical office • Pull method: national statistical office extracts data from administrative source database
		4	Processing administrative data	• Recording a copy of the administrative data as originally obtained • Transforming the administrative data to standard statistical format • Editing and imputing the formatted data in the same way as for statistical survey survey data
	D		**Geospatial data**	• Types of geospatial data • Geostatistical frameworks for georeferencing data • Examples of geospatial data being used in official statistics
	E		**Big data**	
		1	Types of big data	• Types of big data • Categories of big data (phone logs, social media, sensor data, etc.)
		2	Challenges and risks of using big data	• Challenges and risks in using big data (volume, quality, privacy, impermanence, technology, skills, etc.)
		3	Developing relationships with big data providers	• Explaining statistical needs and standards
		4	Accessing big data	• Challenges in accessing sources of big data (technical, legal, financial, etc.)
		5	Processing big data	• Challenges in processing big data
		6	Using big data in official statistics	• Examples of big data use in official statistics
	F		**Relevance to other producers of official statistics**	• Data collection and capture procedures • Data coding and editing procedures

Chapter	Section	Subsection	Description	Comments
IX.			**Analysis and analytical frameworks**	
			Chapter IX the extent to which data should be supplemented with analysis, and the frameworks and methods for doing so, are discussed.	
A			**Introduction**	• Reasons why a national statistical office performs analysis • Structure and contents of the chapter
B			**Supplementing data with analysis**	
	1		Facts and their interpretation	
	2		Analytical functions and information	• Analysis by responsible subject matter area • Analysis by dedicated analysis unit
	3		Review of publications	• Review of data output • Review of analytical output
C			**Methods and systems of analysis**	
	1		Methods of analysis	• Regression and correlation • Seasonal adjustment and time series • Confidentiality rules and disclosure control • Other
	2		Systems of analysis	• Commercial off-the-shelf systems: SAS software, Statistical Package for the Social Sciences software, R statistical software • In-house developed systems
D			**National accounts**	
	1		Conceptual framework	• *System of National Accounts (SNA) 2008*
	2		Organizational arrangements	• Location of national accountants • Relationships with subject matter experts • Relationships of national statistical office, central bank, ministry of finance
E			**Balance of payments**	
	1		Conceptual framework	• *Balance of Payments and International Investment Position Manual*, sixth edition
	2		Organizational arrangements	• Location of compilation • Roles of national statistical office and central bank

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	F		**Other analytical frameworks**	
		1	Environmental account	• Conceptual framework • Organizational arrangements
		2	Labour account	• Conceptual framework • Organizational arrangements
		3	Other analytical frameworks	
	G		**Relevance to other producers of official statistics**	• SNA 2008 • *Balance of Payments and International Investment Position Manual*, sixth edition • Methods and systems of general analysis

X. Dissemination and user communication

Chapter X covers all aspects of data dissemination and user communication are reviewed. The chapter also covers dissemination policy, data types, dissemination platforms and recovering the costs of dissemination.

	A		**Introduction**	
	B		**Dissemination policy**	
		1	Release schedule	• Importance of a release schedule • Establishing a release schedule
		2	Data availability	• Establishing a policy for data availability
	C		**Providing information on the properties of statistical data (metadata)**	
		3	Metadata management	• Access to metadata • Providing documentation • Metadata revisions • Handling of errors
	D		**Different data types for dissemination**	
		1	Microdata	• List types of microdata • Specific issues relating to disseminating microdata (technical, legal)
		2	Macrodata	• List types of macrodata • Specific issues relating to disseminating macrodata (technical, legal)

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	E		**Dissemination by data portals**	
		1	Importance of data portals	• Rise of data portals • Importance of data portals in reducing reporting burdens and improving the quality of reporting data • Selecting the appropriate data portal for a national statistical office • Examples of data portals
		2	National statistical office-specific data portals	• Examples of specific national statistical office data portals • Pros and cons of specific national statistical office data portals
		3	National statistical system data portals	• Needs for a common data portal across a national statistical system
		4	Integrated reporting within a national statistical system	• Use of standards to integrate reporting within a national statistical system (SDMX, Common Statistical Production Architecture, etc.) • Examples of integrated reporting in a national statistical system
		5	Generic data portals	• Examples of generic data portals • Pros and cons of generic data portals
	F		**Dissemination using social media**	
		1	Types of social media	• Rise of social media • Types of social media (Facebook, Twitter, etc.)
		2	Role of social media in dissemination	• Skills needed by a national statistical office to use social media • Ways a national statistical office can use social media in the dissemination process
	G		**Other forms of dissemination**	
		1	Hard-copy dissemination	• Use of print publications • Future of print publications
		2	Multimedia dissemination	• Types of multimedia • Use of multimedia in dissemination • Future of multimedia for dissemination

Chapter	Section	Subsection	Description	Comments
		3	Machine-to-machine dissemination	• Growth of machine-to-machine data exchange • Examples of machine-to-machine data exchange in dissemination
		4	Mobile apps	• Examples of mobile apps for disseminating data
	H		**Recovering dissemination costs**	
		1	Free versus paid access	• Data access models (free, paid, hybrid) • Current trends in data access policies
		2	Role of data resellers	• Examples of data resellers • Pros and cons of using data resellers
		3	Copyright and royalties	• Types of copyright • Legal implications of copyright and royalties • Current trends in use of copyright
	I		**User relations**	• Managing user relations in a national statistical office
	J		**Other dissemination issues**	
		1	Open data movement	• Evolution of the open data movement • Impact of open data for national statistical offices
		2	Moving to a modernized distributed digital system	• Traditional model (non-digital, centralized) • Towards a distributed, modernized digital system
		3	Statistical yearbook	• Requirements for a statistical yearbook • Using data warehouses to disseminate statistical yearbook compilations
	K		**Relevance to other producers of official statistics**	• Other producers of official statistics

Chapter	Section	Subsection	Description	Comments
XI.	**Common statistical infrastructure**			
			Chapter XI covers the statistical infrastructure required to support the statistical production programme, including the development of internal registers, methods, tools, systems and standards.	
	A		**Introduction**	• Notion of statistical infrastructure methods and tools supporting statistical processes • Structure and content of chapter • Multipurpose registers • Statistical methods and tools • Policies, standards and guidelines
	B		**Statistical business register**	
		1	Roles and benefits of the statistical business register	• Source of survey frames • Extension to include sample selection • Source of demographic statistics • Supports the harmonization and integration of economic and business statistics
		2	Conceptual framework	• International standards: SNA 2008; ISIC, revision 4; resolution concerning statistics of employment in the informal sector, adopted by the Fifteenth International Conference of Labour Statisticians, January 1993 • Defining coverage and content
		3	Administrative sources	• Identification of potential sources • Selection of sources • Prevention of duplication
		4	Statistical sources	• Reasons for profiling: special treatment of large businesses • Profiling procedures • Feedback from surveys • Need for statistical business register improvement surveys • Conduct of improvement surveys
		5	Generation of statistical business register snapshots and common frames	• Reasons for snapshots (frozen frames) • Generation of common frames

Register	Section	Subsection	Description	Comments
		6	Generation of survey frames and samples	• Specification of survey population • Derivation of survey frames • Selection of survey samples
		7	Producing statistics from the statistical business register	• Statistical business register as a source of business demographics • Limitations of statistical business register as a data source
	C		**Statistical farm register**	
		1	Roles and benefits of the farm register	• Source of agricultural survey frames • Supports the harmonization and integration of agricultural statistics
		2	Conceptual framework	• International standards • Defining coverage and content
		3	Creation and updating of sources and procedures	• Agricultural census • Administrative sources • Statistical sources
		4	Generation of survey frames and samples	• Specification of survey population • Derivation of survey frames • Selection of survey samples
	D		**Household address register**	
		1	Roles and benefits of address register	• Replaces need for periodic area enumeration of households • Provides frames for household surveys and population censuses
		2	Conceptual framework	• International standards • Defining coverage and content
		3	Sources and maintenance procedures	• Administrative sources • Statistical sources
		4	Generation of household survey frames	• Specification of survey population • Derivation of survey frames • Selection of survey samples
	I		**Household master sample**	
		1	Roles and benefits of the address register	• Reduces need for area enumeration • Provides frames for household surveys

Chapter	Section	Subsection	Description	Comments
		2	Conceptual framework	• International standards • Defining coverage and content
		3	Sources, creation and maintenance procedures	• Population census • Selection of master frames • Master frame area re-enumeration
		4	Generation of survey frames and samples	• Specification of survey population • Derivation of survey frames • Selection of survey samples
	I		**Methodological services**	
		1	Confidentiality and disclosure control	• Legislated requirements regarding privacy and confidentiality • Definition of disclosure • Methods: suppression, perturbation • Customized off-the-shelf systems • Application of disclosure control
		2	Questionnaire design	• Questionnaire design principles • Questionnaire design tools • Responsibility for questionnaire design
		3	Sample design and estimation	• Sampling principles and methods • Sample design tools • Sample selection tools • Estimation methods • Responsibility for sample design and estimation
		4	Editing, imputation and outlier determination	• Editing and outlier detection principles and methods • Imputation principles and methods • Editing, imputation and outlier determination tools • Responsibility for editing, imputation and outlier determination
		5	Seasonal adjustment and time series analysis	• Seasonal adjustment principles • Seasonal adjustment tools • Responsibility for seasonal adjustment

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	G		**Statistical policies, standards and guidelines**	• Note: this section may be absorbed elsewhere — policies in chapter V, standards in chapter XI and guidelines in all the chapters
		1	Statistical policies	• Need for corporate policies • Development of corporate policies • Monitoring and enforcing policies, governance procedures
		2	Standard concepts, variables and classifications	• Benefits of standard concepts, variables and classifications • Supports the harmonization and integration of statistics • Cross reference to chapter XIII
		3	Statistical guidelines	• Guidelines as a basis for training and support • Development of guidelines • Monitoring the use of guidelines
			Application to other producers of official statistics	• Form design • Editing and outlier detection

XII. Human resources management and development

Chapter XII reflects changes in staff hiring, retention and training to cover the evolution of information technology, new data sources, standards of modernization and business architecture.

	A		**Introduction**	
	B		**Staff composition**	• Skills needed in a modern national statistical office • Categories of staff
	C		**Human resources policy**	• Defining a human resources policy for a national statistical office • Elements of a human resources policy
	D		**Recruitment**	• Defining a recruitment policy for a national statistical office
	E		**Training**	• Importance of training for national statistical office staff • Types of training (on-the-job, in-house, Internet, etc.)

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	F		**Job rotation**	• Principles of job rotation • Pros and cons of job rotation for a national statistical office
	G		**Staff retention**	• Challenge of retaining staff • Improving staff retention
	H		**Options available to new chief statistician**	• Concerns and challenges facing a new chief statistician
	I		**Human resources management: a policy package**	• Defining the elements of a human resources policy package
	J		**Relevance to other producers of official statistics**	• Other producers of official statistics • Implications of human resources management for other producers of official statistics

XIII. Data, information and knowledge management

Chapter XIII covers the ownership and custody of records, documents, data, information and other intellectual assets held by the national statistical office, and the policies, guidelines and standards for their collection, storage, maintenance, retrieval, dissemination and destruction.

	A		**Introduction**	• Importance of managing information as a resource • Statistical data as the core asset of a national statistical office needs special management • Structure and content of the chapter • General principles and policies • Managing data and metadata • Managing other information and knowledge
	B		**General information management concepts, principles and policies**	• Concepts: relationships between data information and knowledge • Policies for custody of records, documents, information and other intellectual assets • Governance of information collection, arrangement, storage, maintenance, retrieval, dissemination and destruction

Chapter	*Section*	*Subsection*	*Description*	*Comments*
	C		**Managing statistical data and metadata**	• Statistical data and metadata management principles: single source of truth, need for discoverability, importance of reuse • Developing a data and metadata management strategy • Implementing a data and metadata management strategy
	D		**Managing other information and knowledge**	• Developing an information and knowledge management strategy • Implementing an information and knowledge management strategy
	E		**Relevance to other producers of official statistics**	• Statistical data and metadata management principles • Developing and implementing a data and metadata management strategy
XIV.	**Information technology management**			
			Chapter XIV reflects recent advances in technology, including cloud technology, the use of smartphones and tablet computers, big data, data-visualization techniques, new methods of data collection and dissemination and data integration.	
	A		**Introduction**	
	B		**Review of changes since previous edition, current trends**	
		1	User expectations	• User expectations for information technology services in a national statistical office
		2	Changes in ways of working	• Increase in collaboration between organizations working on projects and sharing software • Organizations develop less and less software for their own use and seek more tools available from the international statistics community (Common Statistical Production Architecture, SDMX Toolkit, OECD.Stat)
		3	Increase in the use of the Internet	• Implications for national statistical offices of increased Internet use • "Internet of things"

Chapter	*Section*	*Subsection*	*Description*	*Comments*
		4	Cloud technology	• Increase in the use of cloud technology • Pros and cons of cloud technology for a national statistical office • Examples of the use of cloud technology by national statistical offices
		5	Smartphones and tablet computers	• Increase in the use of smartphones and tablet computers • Implications for national statistical offices of smartphones and tablet computers • Examples of using smartphones and tablet computers by national statistical offices
		6	Data-visualization software	• Importance of data visualization • Types of data visualization • Increase in the use of data visualization by national statistical offices • Examples of data visualization by national statistical offices
		7	Big data	• Growth of big data (refer to chapter VIII) • Implications of big data for the information technology infrastructure and skill requirements of a national statistical office
		8	Open data initiatives	• Growth of the open data movement (refer to chapter VIII) • Implications of open data for the information technology infrastructure and skill requirements of a national statistical office
		9	Open-source software	• Growth of open-source software • Examples of open-source software relevant to a national statistical office
		10	New methods of dissemination, for example, machine-to-machine, and Internet services	• List new methods of dissemination • Implications of new dissemination methods for a national statistical office information technology infrastructure and skill requirements
		11	Linked data	• Growth of linked data • Uses of linked data for a national statistical office

Chapter	*Section*	*Subsection*	*Description*	*Comments*
				• Data-linking frameworks
				• Requirements and strategies for linking data
				• Examples of linked data
		12	Common Statistical Production Architecture	• Growth in the use of Common Statistical Production Architecture
				• Advantages of Common Statistical Production Architecture for a national statistical office
				• List of software available through Common Statistical Production Architecture inventory
				• Examples of Common Statistical Production Architecture usage by national statistical offices
		13	Data integration and data linkage	• Importance of data integration and data linkage for a national statistical office
				• Examples of data integration and data linkage
		14	Enterprise architecture	• Adoption of enterprise architecture
		15	Artificial intelligence	• Artificial intelligence
		16	Data science	• Data science technologies
		17	Data security	• Importance of data security
	C		**Models of information technology management**	
		1	In-house development	• Software development and maintenance determined internally
				• Autonomy of development and integration
				• Pros and cons
				• Statistics software as a niche market
		2	Outsourced development	• Customize external software to meet organization needs
				• Pros and cons
				• Risks of outsourcing
				• Implications for confidentiality
				• Vendor incentives
				• Vendor expertise versus in-house knowledge
				• Ensuring transparent and ethical relationship

Chapter	Section	Subsection	Description	Comments
		3	Collaborative approach	• Mix of internal and shareable software: Common Statistical Production Architecture approach
	D		**Other current information technology issues**	• Constantly evolving information technology environment • Monitoring new products • New and emerging technologies • Learning from the experiences of others • Need to assess risks
	E		**Use of standards and generic models**	
		1	Need for standards in the industrialization of statistical processing	• Importance of standards • Using standards for modernization and transformation • Examples of standards used in modernization and transformation projects
		2	Generic Activity Model for Statistical Organizations	• Refer to chapter V • Manage information technology assets and services • Manage information technology security • Manage technological change
		3	Generic Statistical Business Process Model	• GSBPM as a conceptual model • GSBPM main processes and subprocesses • Using GSBPM in a statistical organization
		4	Generic Statistical Information Model	• GSIM as a conceptual model • Using GSIM in a statistical organization
		5	Common Statistical Production Architecture	• Using Common Statistical Production Architecture to share statistical components
		6	Statistical Data and Metadata Exchange	• SDMX as a standard for statistical data and metadata exchange • Technical standards (supporting platforms, file formats, Internet services and application programming interfaces) • SDMX and the Sustainable Development Goals • Examples of SDMX implementation in national statistical offices

Chapter	*Section*	*Subsection*	*Description*	*Comments*
		7	Data Documentation Initiative	• Data Documentation Initiative as a standard for microdata exchange • Examples of Data Documentation Initiative implementation in national statistical offices
	F		**Basic information technology infrastructure needs and skill requirements**	
		1	Databases and data warehouses	• Importance of databases in a national statistical office information technology infrastructure • Examples of databases and data warehouses
		2	Specialist statistical-processing and analytical software	• List of specialist statistical processing and analytical software
		3	Dissemination tools	• List of dissemination software
		4	Other skills	• Data visualization • Cloud services • Artificial intelligence • Data science
		5	Self-assessment of information technology infrastructure and needs	• Link to information technology infrastructure self-assessment
	G		**Relevance to other producers of official statistics**	• Other producers of official statistics • Implications in information technology management for other producers of official statistics

XV. Management of finance, buildings and physical space

Chapter XV covers management issues of a more operational nature not reflected elsewhere in the *Handbook*.

A	**Managing environmental, mechanical and electrical needs**	• Ways to manage environmental, mechanical and electrical needs
B	**Managing the arrangement of office space**	• Ways to manage the arrangement of office space
C	**Managing the distribution of offices within a space**	• Ways to manage the distribution of offices within space
D	**Building security**	• Ways to manage building security
E	**Managing finance**	• Ways to manage finance

Chapter	Section	Subsection	Description	Comments
XVI. International activities and collaboration				
			Chapter XVI covers international organizations, cooperation and relations, as well as international standards and requirements.	
	A		**Importance of international standards and requirements**	
		1	International standards and frameworks	• Sustainable Development Goal indicators • Other standards and frameworks
	B		**Coordination of international cooperation at the national level**	• Separate unit responsible for international cooperation • Tasks
	C		**International actors and bodies in the field of statistics**	
		1	Organizations of the United Nations system	• Statistics Division of the Department of Economic and Social Affairs of the Secretariat • Regional commissions • United Nations Secretariat • Specialized agencies of the United Nations system
		2	Organization for Economic Cooperation and Development	
		3	International Monetary Fund	
		4	European Union and Eurostat	
		5	Other non-United Nations regional organizations	For example: • African Union, Commonwealth of Independent States, Caribbean Community, Cooperation Council for the Arab States of the Gulf, Pacific Community
	D		**International professional organizations**	
		1	International Statistical Institute	• Including associations and the International Association for Official Statistics
	E		**International development cooperation**	
		1	Importance of statistical development cooperation	

Chapter	*Section*	*Subsection*	*Description*	*Comments*
		2	Actors in the field of development cooperation	• PARIS21, World Bank, regional development banks, United Nations Development Programme and those mentioned above
	F		**Relevance to other producers of official statistics**	

Annexes

I. Reference documents

II. Glossary

III. Possible organizational structures

Abbreviations: GAMSO, Generic Activity Model for Statistical Organizations; GSBPM, Generic Statistical Business Process Model; GSIM, Generic Statistical Information Model; ISIC, International Standard Industrial Classification of All Economic Activities; ISO, International Organization for Standardization; OECD, Organization for Economic Cooperation and Development; PARIS21, Partnership in Statistics for Development in the 21st Century; SDMX, Statistical Data and Metadata Exchange.

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Open data

Report of the Secretary-General

Summary

The present report, which was prepared in accordance with Economic and Social Council decision 2017/228 and past practices, details work undertaken on open data for the Sustainable Development Goals, including the outcomes of the international seminar on open data for the Sustainable Development Goals, held in the Republic of Korea in September 2017, and a review of country initiatives on open data platforms. The report highlights recommendations on open data principles for national statistical offices. The Commission is invited to consider the points for discussion contained in section VI of the report.

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I. Introduction

1. The 2030 Agenda for Sustainable Development and the global indicator framework have expanded the scope and breadth of data needs from the whole statistical system and helped to promote the engagement of a wider range of data producers and users.

2. The main framework for responding to the data needs of the 2030 Agenda is provided by the Cape Town Global Action Plan for Sustainable Development Data, adopted by the Commission at its forty-eighth session and endorsed by the General Assembly in its resolution 71/313. As part of its six strategic actions, the Cape Town Global Action Plan underscores the importance of open data and includes specific actions to strengthen open data initiatives under the strategic area of innovation and modernization of national statistical systems. In particular, the Global Action Plan calls for: (a) exploring ways of revising the Fundamental Principles of Official Statistics to include relevant and appropriate aspects of open data initiatives; (b) clarifying and supporting the role of the national statistical systems in open data initiatives, consistent with the Fundamental Principles of Official Statistics; and (c) encouraging national statistical offices to embrace the open data initiative and ensure that stakeholders of the national statistical system are part of the process.

3. In its decision 48/102 (see E/2017/24-E/CN.3/2017/35), the Statistical Commission welcomed the conclusions of the seminar on open data, on the theme "Adding value by matching access with privacy and security", held in New York on 3 March 2017, and noted that as open data initiatives are explicitly referenced in the Cape Town Global Action Plan and can play a critical role in supporting the implementation of the 2030 Agenda for Sustainable Development, agreed to include an item on open data in the provisional agenda of its forty-ninth session. Groups working on big data, fundamental principles and quality frameworks were encouraged to take relevant aspects of open data into account in their respective work programmes.

II. Experiences with open data

A. Outcomes of the "Friday seminar on emerging issues" on the theme "Open data: adding value by matching access with privacy and security" (3 March 2017)

4. The seminar on the theme "Open data: adding value by matching access with privacy and security", held on 3 March 2017, prior to the forty-eighth session of the Commission, included a rich discussion among a diverse group of participants, with presentations from countries including Canada, Mexico, New Zealand, the Philippines, the United Kingdom of Great Britain and Northern Ireland and the United Republic of Tanzania, highlighting the value of open data and the progress made in implementing open data in national statistical offices.[1] Representatives of international organizations and the private sector also shared their experiences with open data, both as producers and users of data. The seminar stressed the importance

[1] For more information, see https://unstats.un.org/unsd/statcom/48th-session/side-events/20170303-1M-friday-seminar-on-emerging-issues/.

of four pillars in implementing open data, namely: partnership; technology; legislation and institution setting; and capacity-building and resource mobilization.

B. Outcomes of the international seminar on open data for the Sustainable Development Goals (Seoul, 25–27 September 2017)

5. The international seminar on open data for the Sustainable Development Goals, hosted by Statistics Korea (KOSTAT), was held in Seoul from 25 to 27 September 2017. The seminar was organized by the Statistics Division of the Department of Economic and Social Affairs of the Secretariat and KOSTAT. The seminar contributed to the ongoing dialogue on the importance of open data initiatives in support of the implementation of the 2030 Agenda and drew upon the Friday seminar on emerging issues on the theme "Open data: adding value by matching access with privacy and security", held on 3 March 2017, prior to the forty-eighth session of the Commission. The main objective of the international seminar was to review and recommend solutions and best practices for making data more open and accessible, by addressing the practical question of how to make data more open in the context of national statistical systems. The seminar was also an opportunity to review experiences in countries in relation to the implementation of open data practices and the work undertaken by some of the international partners.

6. In the context of the seminar, "open data" was defined as data that are of high quality, are well documented, respect data privacy concerns, are free and are easily accessible and usable.

7. The discussion focused on addressing some of the challenges faced by the national statistical systems in adapting to open data and promoting the use of open data. The main topics of the seminar included: (a) open data initiatives in support of the 2030 Agenda and the Sustainable Development Goal indicators; (b) supporting the role of national statistical systems in open data initiatives and encouraging national statistical offices to embrace the open data initiative; (c) balancing openness with security and privacy; (d) ensuring stakeholder involvement in open data processes; (e) improving data sharing through data interoperability; and (f) coordinating capacity-building efforts towards open data initiatives.

8. The seminar identified challenges that need to be addressed in the implementation of open data by national statistical systems. These include establishing the necessary infrastructure, in particular managing the integration of multiple portals, to allow for data to be presented and disseminated. Countries also reported an urgent need for capacity-building and training for the development of new skills needed to implement open data initiatives.

9. Adequate funding and budgeting also represent a serious challenge for many statistical offices, as there are multiple areas of work competing for limited resources. Another issue raised during the discussion was the importance of finding a balance between issues of privacy and confidentiality and openness. As "open data" goes across the Government, there can also be difficulties in ensuring adherence by other government agencies to the requirements of open data. Communication and dialogue, including outreach to engage all stakeholders in the process, are an important aspect in being able to implement open data practices. Finally, in some countries, there is an urgent need to revise the laws or legal frameworks to allow for necessary provisions to be included to ensure that data are open and accessible.

10. The international seminar also made specific suggestions related to the work of the global statistical and data systems (see sect. V for more details on the recommendations).

11. Some country examples that highlight the success stories of open data include the following:

(a) New Zealand reported on its open government data programme. A key component of the success of open data in New Zealand has been building and maintaining trust and creating a fundamental shift in how openness and open data are viewed. There has been a change in the role of the national statistical office to support the use and reuse of data, and its efforts have led to an increase in access to data through application programming interfaces and led to innovative applications on its website. In order to balance privacy and openness, privacy has been used as a guiding principle, leading to appropriate access to data while still embracing the value of open data;

(b) The Philippines developed an open data platform called "OpenSTAT" that allows the Philippine Statistics Authority (PSA) to share data under an open data licence. The open data licence allows data to be freely used, reused and redistributed without restrictions other than proper citation. OpenSTAT combines over 900 data sets. Through OpenSTAT, PSA has adopted a policy of openness for all data sets to be created, collected, processed and disseminated in adherence to the general principles of the global movement on open government data;

(c) In Mexico, the National Institute of Statistics and Geography (INEGI) established a specialized technical committee on open data. The goals are to promote the availability of open data and the dissemination, use, reuse and exchange of public statistical and geographical information and to develop and review guidelines, technical standards and best practices.

C. Experience of the Statistics Division with open data for the Sustainable Development Goals

12. The Statistics Division is working with Member States and other partners to develop web applications for improved reporting and communication of Sustainable Development Goal indicators, in particular to provide open access to data and metadata on the Goals for global monitoring. As part of this effort, the Division is conducting an assessment of its web-based data dissemination portals, with a view to adopting best practices in open data in its regular data dissemination programmes and activities. In addition, a recently launched global Sustainable Development Goal indicators application programming interface provides programmatic access to the global indicators database using the OpenAPI specification.[2]

D. Open data in national reporting platforms

13. Within the context of the implementation of a project on supporting countries in the monitoring and reporting on the Sustainable Development Goals, the Statistics Division is organizing a conference on national reporting platforms for the reporting of the Sustainable Development Goal indicators in New York from 22 to 24 January 2018. The conference provides an important opportunity to review and discuss open

[2] Documentation is available from https://unstats.un.org/SDGAPI/swagger/.

data practices and to give guidance specifically on how to integrate open data principles in the establishment of national platforms for the Goals. It is expected to provide recommendations and guidelines for basic requirements of national data platforms suitable for Sustainable Development Goal follow-up and reporting. It is expected that the recommendations will be aligned with the open data standards and best practices, helping the countries to shape their national strategies to implement or adapt their open data portals.

E. Open data practices in international organizations

14. At the thirtieth session of the Committee for the Coordination of Statistical Activities, in September 2017, a task team was created on open data to explore common standards and procedures for improved open data and microdata dissemination. It was emphasized that the work on open data should be aligned with the Cape Town Global Action Plan. The task team will, among other things, conduct a survey among Committee members regarding their adherence to current open data practices and will prepare and submit to the Committee a document outlining the feasibility of moving towards common open data standards and, where feasible, draft relevant common standards and develop effective mechanisms for information exchanges (see E/CN.3/2018/32).

III. Data interoperability as an enabler for open data

15. Interoperability is the ability to access and process data from multiple sources without losing meaning and to then integrate those data for mapping, visualization and other forms of representation and analysis. Developing common standards is essential to realizing the benefits of data interoperability. The value of open data increases with data interoperability, ensuring that different data sets can be brought together and built upon. The underlying needs for openness, transparency, inclusion and participation are all prerequisites to interoperability.

16. The Statistics Division, together with the Global Partnership for Sustainable Development Data, has established a collaborative on Sustainable Development Goal data interoperability. The purpose of the collaborative is to bring together key experts and stakeholders and help to coordinate progress across sectors and geographical regions. The shared vision of the collaborative is a global data ecosystem in which multiple sources of sustainable development data can be easily accessed by anyone and integrated seamlessly in applications that enable improved analysis, decision-making and accountability. To move towards the realization of that vision, members of the collaborative from countries, international organizations and civil society groups have agreed to work together in the development of proposals to address data governance issues and in the design and pilot implementation of replicable prototypes of technical solutions and approaches to tackle specific interoperability challenges. The result of this work will be presented at the United Nations World Data Forum in 2018.

IV. Fundamental Principles of Official Statistics and open data

17. The Fundamental Principles of Official Statistics (see resolution 68/261), the set of professional and scientific standards governing official statistics, provide an important basis for the implementation of open data by national statistical systems.

Principle 1 affirms that "official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens' entitlement to public information", which is one of the core values of open data. An important element of open data is the provision of adequate metadata, as provided by principle 3. The privacy of individual data is guaranteed under principle 6. Transparency in the administration of statistical systems is enshrined in principle 7.

18. At its forty-eighth session, the Commission, in its decision 48/107, requested the newly formed Friends of the Chair group to take into account in the review of the Fundamental Principles of Official Statistics the current discussions on open data, big data and quality assurance.

V. Recommendations on open data

19. The international seminar on open data for the Sustainable Development Goals held in Seoul provided important suggestions and recommendations for the implementation of open data in national statistical systems. The discussion focused on actions that can be undertaken at the national level and work that can be conducted at the global level. The recommendations at the national level are summarized below:

(a) Incorporate the principles and practices of open data in the development of national plans, including in the national strategies for the development of statistics;

(b) Address the issue of open data in statistics laws and related legal frameworks, including aspects of funding needs;

(c) Secure resources and develop the necessary skills of staff in national statistical organizations and systems;

(d) Involve all potential stakeholders to ensure that users' demands are addressed, and consider whether users should be part of the statistical system;

(e) Develop platforms for stakeholder consultations, including for defining the "value" of data and what is valuable to users;

(f) Establish partnerships with all relevant data producers to further enhance open data in the national statistical system;

(g) Develop data interoperability principles and tools, as data interoperability is an important tool to ensure that open data are usable;

(h) Promote the integration of geospatial information with data/statistical information;

(i) Develop data visualization and other data dissemination tools to make data easily understandable and accessible, as they are integral components of the process of making data open.

20. While there are many steps that need to be taken at the national level to implement open data within national statistical offices and systems, there are also actions that need to be addressed collectively and through international instruments. Based on the discussion at the international seminar in Korea, they are summarized below:

(a) There is a need to provide overall guidance for open data practices, recognizing that every country will need to develop its own path;

(b) Collectively, the international data community needs to develop support programmes and guidance for different groups of countries with different capacities and needs to assist them in implementing open data. Providing support based on the different levels of needs will allow for country-to-country support so that countries with more developed systems for open data can share their best practices;

(c) There is a need to redefine national statistical systems, recognizing the expansion of the data ecosystems and including all relevant data producers and users, with national statistical offices at the centre. The United Nations World Data Forum in 2018 provides an opportunity and space to further advance the work on open data across all data ecosystems. It will also be an opportunity to further strengthen partnerships between national statistical offices and other data producers;

(d) The core principles of open data are embodied in the Fundamental Principles of Official Statistics (principles 1, 3, 6 and 7 in particular) and could be mapped to the open data principles highlighted in the Open Data Charter. A clear acknowledgement of the alignment of the Fundamental Principles and open data principles could be helpful for the implementation of open data at the national level;

(e) Tools and governance systems for data interoperability should be developed;

(f) In order for national statistical offices to have some practical guidance in the implementation of open data practices, open data guidance and examples of best practices should be included in the updated version of the Handbook of Statistical Organization (E/CN.3/2018/5);

(g) A website for open data best practices should be established, to be hosted by the Statistics Division;

(h) Capacity development programmes and projects also provide opportunities to strengthen statistical systems. The seminar recommended promoting the inclusion of open data principles and practices in capacity development programmes and projects.

21. The seminar finally recommended that a mechanism be established within the Statistical Commission to work on principles, guidance and support for the implementation of open data in countries. The mechanism would address the following tasks:

(a) Review the principles of open data and develop recommendations for national statistical offices on the implementation of open data;

(b) Review legal frameworks for open data;

(c) Define and clarify the technical aspects and skills needed for the implementation of open data;

(d) Provide guidance on and support the implementation of open data; and

(e) Develop guidelines on the anonymization of data.

To build upon ongoing work, it is suggested that the Friends of the Chair group on the Fundamental Principles of Official Statistics, established at the forty-eighth session of the Statistical Commission, take on these additional tasks, possibly through a subgroup.

VI. Points for decision

22. **The Statistical Commission is invited to:**

(a) **Express its views on the recommendations contained in section V as a basis to carry the work forward;**

(b) **Review and express its views on the establishment of a mechanism within the Statistical Commission to work on principles, guidance and support for implementation of open data in countries, possibly as a subgroup of the Friends of the Chair on the Fundamental Principles of Official Statistics;**

(c) **Review and express its views on the proposed tasks of the subgroup on open data, as detailed in paragraph 21.**

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Items for information and discussion: household surveys

Report of the Intersecretariat Working Group on Household Surveys

Note by the Secretary-General

In accordance with Economic and Social Council decision 2017/228 and past practices, the Secretary-General has the honour to transmit the report of the Intersecretariat Working Group on Household Surveys. It provides a summary of the recent activities undertaken by the Intersecretariat Working Group on Household Surveys, including the mapping of global Sustainable Development Goal indicators and household surveys. The report contains a proposal for establishment of a trust fund for the implementation of various future activities of the Group. The Commission is invited to review the progress of work of the Intersecretariat Working Group on Household Surveys and comment thereon and provide necessary guidance on (a) the proposed future areas of work; and (b) the proposal for establishment of the trust fund.

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Report of the Intersecretariat Working Group on Household Surveys

I. Introduction

1. At its forty-sixth session, in 2015, the Statistical Commission, in decision 46/105, endorsed the establishment of an Intersecretariat Working Group on Household Surveys,[1] under the aegis of the Statistics Division of the Department of Economic and Social Affairs of the Secretariat, to foster the coordination and harmonization of household survey activities (see E/2015/24, chap. I, sect. C). In the same decision, the Commission also requested the development of the terms of reference of the Intersecretariat Working Group under the guidance of the Bureau of the Commission, to be presented to the Commission at its forty-seventh session. The list of current members of the Group are listed in the annex to the present report.

2. The terms of reference of the Intersecretariat Working Group on Household Surveys were presented to the Statistical Commission at its forty-seventh session for information, through the report of the Secretary General on the Intersecretariat Working Group (E/CN.3/2016/21), which included the rationale, objectives and the mandate of the Group as well as its governance structure. The Commission took note of the report (see E/2016/24, chap. I, sect. B, decision 47/116).

3. The progress of work of the Intersecretariat Working Group since its establishment was set out in the report of the Secretary-General (E/CN.3/2017/20), which was submitted to the Statistical Commission at its forty-eighth session. A discussion of the broad contours of the work to be undertaken by the Group in the next two to three years was also included in that report.

4. The present report provides information on progress made by the Intersecretariat Working Group on Household Surveys since the submission of the report of the Secretary-General (E/CN.3/2017/20) to the Statistical Commission in 2017. This report also includes proposed future areas of work which are more cross-cutting in nature and identifies some specific outputs to be delivered by the Intersecretariat Working Group in the next two to three years. The Group recognizes that resources are needed to generate momentum in the context of its work and is therefore, striving to develop a proposal for the establishment of a trust fund, which will be outlined in a background document to be made available to the Commission in February 2018.

II. Progress of the work of the Intersecretariat Working Group on Household Surveys since the report submitted to the Statistical Commission at its forty-eighth session

5. The Management Group of the Intersecretariat Working Group, at its third meeting, held on 27 September 2017, deliberated on two main issues, namely, the working procedure for smooth functioning of the Intersecretariat Working Group and resources needed for implementing its activities. The working procedures now under development include several elements related to the day-to-day functioning of the Intersecretariat Working Group, namely, selection of the Chair, meetings, establishment of task forces, clearance of outputs and criteria for inclusion of new

[1] Further information is available at the website of the Intersecretariat Working Group (https://unstats.un.org/iswghs).

members. The Management Group also recognized the importance of injecting resources in support of some of the crucial activities of the Intersecretariat Working Group and discussed the initial funding proposal which was presented by the World Bank.

6. The Technical Working Group held its second meeting on 27 August 2017 and followed up with its first face-to-face meeting on 16 and 17 November 2017. Those two meetings held in quick succession helped provide a new sense of direction to the future work of the Intersecretariat Working Group under the overall guidance and direction of the Management Group. It was decided to move away from sectoral issues and rally around activities that were more cross-cutting in nature. The Technical Working Group identified a few broad areas of cross-cutting activities to be undertaken in the next few years. The Group reviewed its recent work on the mapping of global Sustainable Development Goal indicators and household surveys and decided to develop a paper that would be used as a basis for developing a coordinated and integrated approach to the international programme of household surveys, underscoring the value of household surveys in the Sustainable Development Goals era. The Technical Working Group also agreed to align the funding proposal to strengthen the secretariat for day-to-day support of the work programme as well as fund future activities, particularly those are cross-cutting in nature.

7. Progress has been made in the work of the various task forces established under the Intersecretariat Working Group on Household Surveys. The two task forces that have made the most progress are the task force on education expenditure (led by the United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics) and the task force on food consumption (led by the Food and Agriculture Organization of the United Nations (FAO)). The task force on education expenditure has already completed a report on the availability and reliability of education finance data in household surveys, published in May 2017, and is now working on a technical protocol for data processing. The task force led by FAO has completed its technical work and will transmit information thereon through the report of FAO on agricultural and rural statistics (E/CN.3/2018/13). The task force on labour statistics led by the International Labour Organization (ILO) aims at producing guidance to support countries using different types of surveys to measure labour input. Currently, ILO and the World Bank are conducting a joint pilot study in Sri Lanka to assess the impact of measurement of labour and labour underutilization in different types of surveys (the Labour Force Survey and the Living Standards Measurement Survey). Reporting on this process is expected by the end of 2018. The work of the task force on survey data documentation, led by the World Bank, which is in progress, is expected to be completed in 2018. The United Nations Office on Drugs and Crime (UNODC) has already developed guidelines and a questionnaire on the measurement of corruption and bribery through household surveys in collaboration with the Centre of Excellence in Statistical Information on Government, Crime, Victimization and Justice,[2] the World Bank, the Organization for Economic Cooperation and Development (OECD) and a few countries. It has also used a module on victimization surveys in some countries in Latin America and is currently working on a document demonstrating how to compute Sustainable Development Goal indicators based on a set of questions.

8. The Intersecretariat Working Group on Household Surveys established a work stream in order to map the entire range of global Sustainable Development Goal

[2] Created in 2010 to initiate technical cooperation between UNODC and the National Institute of Statistics and Geography of Mexico.

indicators for which data could be derived from household surveys. The goal of such a mapping exercise was to develop a shared vision of how household survey-based data for Sustainable Development Goal indicators can be efficiently delivered by countries and, in a parallel attempt, to identify activities required by the agencies to support countries in this task. The exercise started with the development of a template for obtaining information from member agencies of the Intersecretariat Working Group on various aspects of the household surveys currently used or proposed for use in future to collect data on those indicators for which those members are the custodian agencies. The items of information which were included in the above-mentioned template are given below:

1. Goal
2. Target
3. Indicator
4. Tier
5. Custodian agency or agencies
6. Partner agency or agencies
7. Is data currently being collected through household surveys? Yes (fully)/Yes (partially)/No

If Yes for item 7:

(a) Typical household survey(s) used for collection

(b) Any special sampling requirements. If Yes, describe

(c) Population coverage needed

(d) Proposed periodicity

(e) Suitable for multi-topic survey (Yes/No)

(f) Do standards exist on measurement? Yes/No (if Yes, provide link)

(g) Does a standard questionnaire module exist? Yes/No (if Yes, provide link)

If No for item 7, are plans/work under way to collect data through household surveys (Yes/No). If Yes, describe the work on standard/guidance development undertaken

(8) Remarks (if any)

9. The information obtained through the above-mentioned template is currently being reviewed for final analysis on the current state of play with respect to measurement of the Sustainable Development Goal indicators through the household survey programmes of international agencies. The final analysis will be submitted in a background document to the Statistical Commission in February 2018. A preliminary analysis of the information shows that a total of 77 of the Sustainable Development Goal indicators can be sourced (either currently or on the basis of a proposal) from household surveys. This is spread widely across topics (13 of the 17 Goals are involved) but with the greatest concentration in the areas of health, education, gender equality, poverty, hunger, labour and justice, which points to the fact that a coordinated finite set of surveys offers the potential to deliver on a large proportion of the indicators. For example, close to two thirds of indicators could be produced at the desired frequency through a cycle of Demographic and Health

Surveys, Multiple Indicator Cluster Surveys, Living Standards Measurement Surveys, Household Income Expenditure Surveys and Labour Force Surveys. Some additional indicators could possibly be covered by the same surveys. Further efficiency could be built into the system through a review of survey instruments with a view to identifying opportunities for coherence in variable specifications or modules where topics overlap. Such work has already been carried out among agencies and could be further expanded. Such a coordinated system has the potential to expand opportunities for capacity development in household surveys and could improve coherence across surveys and promote more cross-analysis. In addition to pointing to the possibility of efficiency gains in implementing a coordinated household survey system, the Sustainable Development Goals create some common cross-cutting challenges which can inform priority setting for cross-cutting work. Specifically, as all countries will face challenges associated with disaggregation and integration across sources, work on developing guidance and support in these areas can be of significant value.

10. The Intersecretariat Working Group on Household Surveys is currently updating the inventory of household survey guidance and training materials that was submitted to the Statistical Commission in 2017 in a background document. This will help the Intersecretariat Working Group systematically review the available materials in order to identify commonalities and synergies as well as gaps so as to enable development of a strategy for training on theoretical and practical aspects of household surveys. The updated inventory will be submitted to the Commission in a background document in February 2018.

11. The Intersecretariat Working Group on Household Surveys is preparing a proposal on the establishment of a trust fund to support the work of the Group and sustain its momentum through the implementation of its future activities. This proposal is expected to cover three components, namely, (a) technical coordination, (b) methodological validation and standard setting, and (c) country consultation and advocacy. For each component, a few sub-items/activities have been identified for inclusion in the funding proposal, which will, to a large extent, be aligned to the cross-cutting activities identified by the Group. While the funding proposal would apply a longer-term perspective to the strategic direction, it would also include a more specific two-year funding request for clearly identified activities. A summary of the proposal for the establishment of the trust fund will be submitted to the Statistical Commission in a background document in February 2018.

III. Proposed future activities of the Intersecretariat Working Group on Household Surveys

12. The Intersecretariat Working Group on Household Surveys proposes to undertake the following activities, as grouped under broad areas of work in the medium term (see directly below). The success of the Intersecretariat Working Group in implementing these activities will be evaluated in terms of the number and quality of the outputs it delivers, which will hinge, to a large extent, on the ability of the Group to raise matching resources for the trust fund.

1. Technical coordination

(a) Establish a technical secretariat for the Intersecretariat Working Group

(b) Coordinate the work of the Technical Working Group and the task forces and report thereon to the Management Group

(c) Foster methodological research and standard setting, focusing on cross-cutting issues, through the establishment of task forces and commissioning of work

(d) Lead in the publication of guidelines and best practices, following endorsement by the Statistics Division

2. **Methodological validation and standard setting**

(a) Develop a paper on a coordinated and integrated approach to an international programme of household surveys in countries, underscoring the value of household surveys in the era of the Sustainable Development Goals. The paper will be based on the ongoing work on mapping of Sustainable Development Goal indicators and household surveys

(b) Develop guidance, standards and protocols on topics related to household surveys through commissioned work, for example, on quality assurance functions, use of the computer-assisted personal interview (CAPI), sensitive topics in household surveys, questionnaire design and testing protocol, data disaggregation, data triangulation, the protocol for microdata sharing including geo-referenced data, a standard training curriculum and materials on household surveys

(c) Update the Statistics Division publication entitled *Designing Household Survey Samples: Practical Guidelines*,[7] published in 2008

3. **Country consultation and advocacy**

(a) Coordinate the process for consultation with experts and countries on guidance, standards and protocols

(b) Support capacity-building

(c) Organize a panel on household surveys in Sustainable Development Goals monitoring at the UN World Data Forum in October 2018

(d) Organize an international conference on household surveys

IV. Points for discussion

13. **The Statistical Commission is requested to comment and provide guidance on:**

(a) **The proposed future areas of work of the Intersecretariat Working Group on Household Surveys;**

(b) **The proposal for the establishment of a trust fund for implementing work in the areas specified in the plan set out in section III above.**

[7] Series F, Studies in Methods, No. 98 (United Nations publication, Sales No. E.06.XVII.13).

Annex

Membership of the Intersecretariat Working Group on Household Surveys

The members of the Intersecretariat Working Group include the following international organizations:

Food and Agriculture Organization of the United Nations

International Labour Organization

United Nations Children's Fund

United Nations Educational, Scientific and Cultural Organization (UNESCO) Institute for Statistics

United Nations Office on Drugs and Crime

World Bank

World Health Organization

Statistics Division of the Department of Economic and Social Affairs of the Secretariat

The Statistics Division serves as the secretariat of the Intersecretariat Working Group.

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Report of the Global Working Group on Big Data for Official Statistics

Note by the Secretary-General

In accordance with Economic and Social Council decision 2017/228 and past practices, the Secretary-General has the honour to transmit the report of the Global Working Group on Big Data for Official Statistics. Over the last four years, the Working Group has identified many initiatives that aim to make new data sources, corresponding services and innovative applications accessible, and tried to harness their use in research and capacity-building for statistical production processes. The report responds to the request made by the Commission in its decision 48/105 and describes the progress made in the articulation and development of a global platform. This platform will be developed by the Working Group for global collaboration on trusted data, trusted methods, trusted partners and trusted learning, and is envisaged as a marketplace for sharing and developing trusted data, services and applications. The Working Group platform will operate as part of a federated network of autonomous platforms at the national, regional and global levels with defined interfaces to ensure interoperability and information-sharing. The Working Group task teams will collaborate on their use cases through the Working Group platform, which will be developed and operated under the auspices of the Statistical Commission. In the points for discussion contained in the last section of the report, the Commission is invited to comment on the articulation and development of the Working Group platform, on the progress made in 2017 and on the actions proposed for 2018.

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I. Introduction

1. The Statistical Commission created the Global Working Group on Big Data for Official Statistics at its forty-fifth session, held in 2014. In accordance with its terms of reference (see E/CN.3/2015/4) and decision 46/101 of the Commission (see E/2015/24-E/CN.3/2015/40), the Working Group provides strategic vision, direction and the coordination of a global programme on big data for official statistics, including for indicators in the 2030 Agenda for Sustainable Development.

2. In its decision 48/105 (see E/2017/24-E/CN.3/2017/35), the Commission requested the Working Group to develop the business case and proof of concept for a global platform for collaboration on data, services and applications by applying an incremental and step-by-step approach.

3. In the present report, the Working Group responds to the above-mentioned request of the Commission and describes the progress made in the development of the business case and proof of concept for a Working Group platform of trusted data, trusted methods, trusted partners and trusted learning supported by core services, which will enable and advance the work of the Working Group task teams. Moreover, the Working Group reports on its annual management meeting, the fourth Global Conference on Big Data for Official Statistics, held in Bogota from 8 to 10 November 2017. The meeting was attended by senior managers from 20 national statistical agencies and 10 international organizations, complemented by senior representatives of several non-governmental organizations and private sector companies.[1] Its agenda covered the progress reports of the task teams, the proof of concept for the Working Group platform and the business case for the platform. The meeting agreed on the Bogota Declaration (see annex II to the present report).

4. There is a need for general platform facilities for the larger international community involved in big data for official statistics, as well as specific platform facilities for the Working Group itself, in particular its task teams. Therefore, it is expedient to make a distinction between the global network of platforms at the national, regional and global levels serving the larger international community, on the one hand, and the Working Group platform, defined as the platform of and for the Working Group itself, on the other. The Working Group platform is part of the global network and can be seen as its precursor.

5. The report highlights the main elements of the Bogota Declaration that describe the progressive articulation of the business case for the Working Group platform based on ongoing practices of the task teams. The Bogota Declaration also provides strategic direction and vision for the efforts of the Working Group to advance innovation and modernization of national statistical systems through trusted global data collaboratives developed by the task teams under the Working Group on the basis of trusted data, trusted methods, trusted partners and trusted learning.

6. The report describes the Bogota Declaration and the progress made in the articulation of the business case and proof of concept for the Working Group platform in sections II and III. Section IV shows the progress made by the various task teams of the Working Group and elaborates on the capacity-building prospects in this

[1] The Working Group meeting was attended by a large majority of its current members and by five new members, namely Switzerland, Germany, the International Monetary Fund, the African Development Bank and the Economic Commission for Africa. Saudi Arabia was also welcomed as a new member, even though it was unable to be represented at the meeting. The full updated list of Working Group members is available in annex I to the present report.

domain. Section V presents the outcome of the fourth Global Conference on Big Data for Official Statistics, while section VI describes the future actions to be taken by the Working Group to advance its work programme. The report concludes with points for consideration by the Statistical Commission.

II. The Bogota Declaration

7. The Bogota Declaration builds on the recommendations contained in the report entitled "A world that counts: mobilizing the data revolution for sustainable development", issued by the Secretary-General's Independent Expert Advisory Group on a Data Revolution for Sustainable Development, concerning: (a) technology, innovation and analysis to establish a network of data innovation networks for leveraging and sharing data and data research; (b) capacity-building and resources related to capacity-building, technology transfer, data literacy and resource mobilization through innovative financing mechanisms in partnership with the private sector; and (c) governance and leadership related to partnerships and coordination between governments, the private sector, non-governmental organizations, the media and academia to promote good practices and principles in data sharing, open data and data rights. The declaration also builds on the recommendations contained in the Cape Town Global Action Plan for Sustainable Development Data with respect to applying statistical standards and new data architecture for data sharing, exchange and integration, and to facilitating the use of new technology and new data sources in statistical production processes.

8. In the Bogota Declaration, the Working Group proposes to provide a major impetus for the strategic area of the Cape Town Global Action Plan on innovation and modernization of national statistical systems through trusted global collaboration and a global network of platforms, which is envisaged as a marketplace for sharing and developing core catalogues of services, data, metadata, methods, application programming interfaces, information technology tools and training materials. The global network operates as a federated network of platforms at the national, regional and global levels, which ensures interoperability and information-sharing among the platforms in the network through agreed and defined interfaces. The Working Group platform is intended for use by the Working Group task teams and is envisaged initially to meet the requirements for research and development in the use of multisource data. However, when relevant and legally possible, it will gradually incorporate the use of multisource data for statistical production, including the production of Sustainable Development Goal indicators. The Working Group platform is expected to be developed and operated under auspices of the Statistical Commission.

9. Also in the Bogota Declaration, the Working Group recommends fostering global collaboration, facilitated by the global network of platforms. The Working Group task teams can collaborate on their own platform within the federated network and should allow trusted data, trusted methods, trusted services and trusted applications to be shared as a public good, where useful and legally possible. Transparent partnership agreements will need to be developed with private- and public-sector organizations so that Working Group platform partners contribute and derive value through a business model which is individually sustainable for all stakeholders and ensures access to a trusted data and technology infrastructure.

10. The members of the Working Group agreed unanimously on the Bogota Declaration in person on 7 November and through subsequent exchange of emails. The full text of the declaration can be found in annex II.

III. The Working Group platform

11. The Bogota Declaration sets forth the details and drivers of the Working Group platform as a facilitator for sharing, exchanging and developing trusted data and metadata, trusted methods, trusted partners and trusted learning. This collaboration will gradually develop catalogues and libraries for data, metadata, methods, partners and learning on the Working Group platform (see figure).

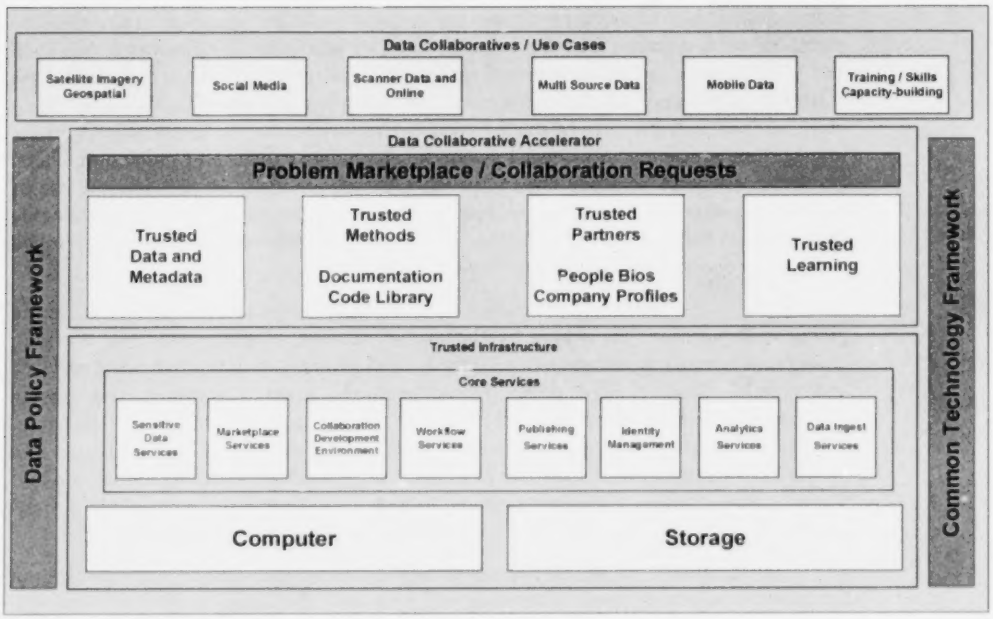
12. The Working Group platform will be part of an interconnected and federated network of platforms, which is based on the best practices of private and public big data initiatives. The Working Group platform offers technology infrastructure and constitutes a network for data innovation to facilitate global collaboration of the official statistical community on:

(a) The exchange of ideas and methods for processing, analysing and visualizing big data between official statisticians, data scientists and domain experts from the public and private sectors, with a focus on research and development building towards modernized statistical production;

(b) The sharing and exchange of trusted metadata, methods, services and applications for continuous development and reuse, including sharing trusted data where useful and legally possible. The sharing of sensitive data between trusted partners will be agreed upon bilaterally, while widely applicable open data sources can be generally made available;

(c) The development, jointly among the official statistical community, private sector technology companies and other communities, of a trusted data architecture so that different types of data can be shared safely and securely.

Architecture of the Working Group platform



13. As shown in the figure, the data policy framework of the Working Group platform is meant for data governance and information management and consists of a set of rules and regulations under which the Working Group platform must operate in storing, processing and disseminating information.[2] Following these rules will reduce the risks associated with inconsistently managed information, which will, in turn, reduce the cost of handling such risks and allow for increased flexibility in a changing technology and information environment over time. The common technology framework is a policy and technology framework meant to deliver data, accessible services and open source applications and associated application programming interfaces as a trusted public good to which all Working Group platform public and private sector network partners subscribe and adhere through contractual agreements.

14. The task teams of the Working Group would be the first partners to progressively develop the data and technology architecture of the Working Group platform on the basis of their requirements and real user demands and business cases. Other proofs of concept will include the trade data lake, which will initially consist of publicly available data on international trade and transport, such as trade data from the United Nations Comtrade database, data from the detailed database of the United Parcel Service, aviation data from the International Civil Aviation Organization and vessel tracking data. It is envisioned that gradually more sensitive data will be added to the platform, such as customs administration data (for example, data generated by the Automated System for Customs Data), which could be processed by trusted users, under strict protocols, directly in the data lake, making use of the latest tools and applications in the cloud server environment.

15. The Working Group platform is further expected to support capacity-building by compiling a library of trusted training materials, methods and software applications and conducting workshops on modernization of official statistics, the use of alternative data sources (such as big data) and the application of new tools, services and analytical techniques.

16. The development and maintenance of the platform will be undertaken under the auspices and guidance of the Commission, in support of national statistical systems of developed and developing countries. The implementation of the platform within the federated network of platforms will strengthen modern trusted data usage and information infrastructure for the global community of official statistics.

17. In further developing the platform and the underlying standards, methods, models and applications, the Working Group will have to make critical decisions on both technology and scientific matters. The Working Group has limited expertise in these areas. Therefore, the Working Group considered establishing two advisory groups, one on technology matters and one on scientific matters. These advisory groups would guide the Working Group on decisions regarding matters of technological development and scientific quality. It is foreseen that these groups will have a core group of advisers, which can be temporarily supplemented with additional advisers if certain matters so require. In addition, advisory groups could be established on legal matters and on fundraising to expedite the work of the task teams, including capacity-building, testing and experimentation in pilot countries.

[2] Some standards are already available at https://github.com/UNGlobalPlatform/standards.

IV. Working Group task teams and capacity-building

18. The Working Group has active task teams on the use of satellite imagery data, mobile phone data, social media data and scanner data and a task team on training, skills and capacity-building. The progress of each of these task teams is reported in the present section. A more detailed overview of their work and their training workshops will be posted on the Working Group website.

A. Satellite imagery data

19. The task team on satellite data has completed its handbook, which contains information about sources of earth observation data, methodologies for producing crop and other statistics using satellite imagery data, outlines of the task team's pilot projects and general guidance for the statistical community exploring the use of earth observation data for statistical purposes. The handbook will be reviewed by the advisory group on scientific matters, when established, before release on the public website of the Working Group.

20. On behalf of the Working Group, Professor Kerrie Mengersen and a colleague from the Queensland University of Technology in Brisbane, Australia, a scientist from the Department of Industry, Innovation and Science of the Government of Australia and a senior statistician of Statistics Canada developed a training course on the use of earth observation data for agricultural crop statistics. The course was conducted on 6 and 7 November 2017 in Bogota, prior to the fourth Global Conference on Big Data for Official Statistics. The 20 participants in the course came from statistical institutes from around the world.

21. The workshop gave advice on selecting data sources, on preparing raw satellite images for analysis and on different methods of producing statistical outputs. It also provided case studies on use of earth observation data to monitor key Sustainable Development Goal indicators, demonstrations in the use of software package "R" and hands-on assistance in producing statistical outputs from satellite imagery data. The practical focus was on crop-type identification and classification on the basis of Landsat 7 and ground reference data. The workshop led to a better understanding of the strengths and limitations of satellite data, the management and manipulation of satellite data and the application of satellite data for crop statistics.

B. Mobile phone data

22. The task team on mobile phone data finalized the first full draft of its handbook on the use of mobile phone data for official statistics, which describes in detail applications, data sources and methods. The handbook also includes business models for partnerships between national statistical offices and mobile operators for access to mobile phone data and concludes with two country cases from France and Indonesia. The handbook will be reviewed by the advisory group on scientific matters before release on the public website of the Working Group.

23. Prior to the fourth Global Conference on Big Data for Official Statistics and on behalf of the Working Group, two data scientists from Positium, a private sector intermediary, and one statistical methodologist from Eurostat conducted a workshop on the use of mobile phone data for official statistics for about 25 participants from national and international statistical institutes. The workshop used materials based on

projects with mobile operators across the European Union, the Middle East and Indonesia, resulting in the analysis of mobile data from 11 countries.

24. The trainers elaborated on the technical details of data preparation, data processing, and data modelling using hands-on examples, such as applications to model population movement, migration patterns, mobility, displacement due to diseases, tourism and real-time crowd mapping. Data related to these areas can be collected very quickly, in some cases in real time, from the mobile phone operators. Access to the data varies from country to country based on different legal and political frameworks. The workshop concluded with a discussion of possible road maps for embedding the use of mobile phone data in the official statistics of the participating countries.

C. Social media data

25. The task team on social media data is also in the process of completing a handbook on the use of social media data for opinion and sentiment indicators. It includes descriptions of various social media data sources (such as Twitter and Facebook), explanations of methods and techniques to analyse such data sources and descriptions of applications. Once the handbook is finalized, it will be reviewed by the Working Group advisory group on scientific matters before release on the public website of the Working Group.

26. Prior to the fourth Global Conference on Big Data for Official Statistics and on behalf of the Working Group, statisticians from the National Institute of Statistics and Geography of Mexico (INEGI) and the National Administrative Department of Statistics of Colombia (DANE) and a data scientist from Statistics Netherlands conducted a workshop with materials based on projects covering mobility analyses, sentiment analyses and subjective poverty measurement using mostly Twitter and Facebook data. The trainers explained the process of obtaining social media and web scraping data through application programming interfaces, the software and programming languages used to clean and process the data and the latest methodologies for data analytics, including machine learning.

27. Understanding of the scope, nature and coverage of social media data is important in these analyses. Not all social media platforms are equally popular among different age groups. Analysts need to have an understanding of how many users there are and their socioeconomic profile, i.e. they need to understand the population of their study. The behaviour of the users (e.g. frequency of posting) and the reach of the posts (whether public or private) can also influence the opinions which are expressed.

D. Scanner data

28. A new task team on scanner data was established in April 2017. It hit the ground running by making available the software code and statistical methods developed by the Bureau of Statistics of Australia, Statistics New Zealand and Statistics Netherlands for the use of scanner data in the production of consumer price indices. These statistical methods and software code were sharable and well-documented. The methods have been reviewed and released as open-source applications using software package "R". The task team made an explicit point of keeping the Intersecretariat Working Group on Price Statistics informed about the progress of its work.

29. Members of this task team have also started drafting a guide to explain and demonstrate a broad set of the methods for using scanner data in the calculation of consumer price indices. The availability of the guide and open source software will allow other statistical offices to experiment and test scanner data for potential use in their statistical production process, along with web-scraped and survey data.

30. On behalf of the Working Group, statisticians from the Bureau of Statistics of Australia, Statistics Belgium, Statistics Canada and Statistics Denmark conducted a training workshop on scanner and the use of online data for the compilation of consumer price indices the evening prior to the fourth Global Conference on Big Data for Official Statistics. The workshop provided information on how to access online data, select data sources and prepare raw data for use and described the status of scanner data implementation in different countries. The workshop also included a live demonstration using the consumer price index software written with software package "R" and provided hands-on assistance in scraping online data from websites. This led to a better understanding of the strength and limitations of the use of scanner data and online data and the strengths and weaknesses of several index methodologies for the compilation of consumer price indices.

E. Training, skills and capacity-building

31. The task team on training, skills and capacity-building organized its work around developing methods and tools to assess the needs for big data skills in national statistical systems, coordinating Working Group training courses, developing a modular training curriculum and cooperating within the global network of training programmes on the use of big data for official statistics. The task team worked to enrol representatives from developing countries in the European Statistical Training Programme (ESTP) to ensure they were properly represented.

32. Experiencing high demand from European statistical offices for ESTP courses related to the use of big data for official statistics, the task team accelerated the development of its own training courses with the support of other Working Group task teams. The success of the four training workshops organized by the task teams in Bogota in November 2017 demonstrates that the Working Group is able to offer a trusted learning programme with the support of member countries of the task teams. It is expected that a trusted learning curriculum will be further developed and announced for 2018 in collaboration with members of the task teams and the Working Group management group.

V. Outcome of the fourth Global Conference on Big Data for Official Statistics

33. The fourth Global Conference on Big Data for Official Statistics was held at the Ministry of Information and Communications Technologies of Colombia in Bogota from 8 to 10 November 2017. The sessions were attended on average by about 280 statisticians, data scientists and information technology specialists from around the world, with 350 participants turning out for the first day of the Conference. The Conference was organized by the Working Group in close cooperation with DANE, the national statistical office of Colombia.

34. The overarching theme of the conference was the use of "trusted data collaboratives" to share, exchange and develop data, services and applications for the

modernization of national statistical systems. In his keynote speech,[3] Alexandre Barbosa, Director of the Regional Centre for Studies on the Development of the Information Society in Brazil, clearly laid out three strategic areas for the innovation and modernization of national statistical systems: (a) institutional reform with respect to multi-stakeholder partnerships and the leading role of the national statistical offices; (b) new standard setting for open data, data security and interoperability; and (c) the use of new big data sources and corresponding technologies, including data storage, data integration and machine learning and artificial intelligence. He recognized that the use of big data had human, technical and technological challenges. However, the major impediment was institutional in nature. He highlighted good practices in addressing those challenges through the establishment of multi-stakeholder "trusted data collaboratives" by, for example, national data centres and data science campuses for research and development and statistical production. At the international level, a platform of the Global Working Group on Big Data for Official Statistics would complement the emerging network of national and regional platforms for the innovation and modernization of official statistics.

35. The Conference approached its main theme starting from the need for innovation and modernization of the national statistical systems, forging a strong link with the Cape Town Global Action Plan regarding the monitoring of progress on the 2030 Agenda for Sustainable Development through the use of new data and innovative technology. New collaborative initiatives were presented for establishing national data centres and science campuses and creating city data centres in selected municipalities for the purposes of harmonization and value creation by the national statistical system. Subsequently, panel sessions focused on broadening participation in the existing global collaboratives led by Working Group tasks teams in the use of earth observation data, scanner data and mobile phone data. Each of the panels emphasized the role of the statistical community in setting standards for trusted data, methods, partners and learning in the use of the data sources. Means should also be established to enable access to and use of the standards through a Working Group platform. A dedicated panel session on standards, consisting of representatives of the private and public sector, confirmed the need for defined principles and standards on encryption, data security and data protection for secure information sharing, which are subject to continuous technological update.

36. In the closing session of the Conference, a proof of concept of the envisaged data and technology infrastructure of the Working Group platform was presented by the Office of National Statistics of the United Kingdom of Great Britain and Northern Ireland. The data and technology model is built on the concept of trusted data, trusted methods, trusted partners and trusted learning to connect and create value for users and stakeholders and is supported by large sets of agreed core services, which are shareable within the international collaboration. Specific examples were shown, supported by video demonstrations covering some of the platform's core supporting services relating to sensitive data services, software development, publishing services, analytics services and data ingestion services. All of the proposed core services are based on open source software and are therefore freely available.

37. The Conference concluded with the sharing of views on the Bogotá Declaration[4] and the expression of commitments to collaborate on the Working Group platform through the existing and new task teams.

[3] The text of the speech is available from https://unstats.un.org/unsd/bigdata/conferences/2017/.../default.asp.

VI. Proposed actions of the Working Group

38. The Working Group has created a committee dedicated to the articulation and development of the Working Group platform, and collaboration on the platform has been organized through the Working Group task teams acting as global data collaboratives. Task teams have a known reporting mechanism within the Working Group and new data collaboratives will be created as new task teams under the Working Group. Short-term actions for the Working Group are completion of proofs of concept for the Working Group platform, upgrading of the Working Group website to provide a better vehicle for communication and advancement of the Working Group's capacity-building programme.

A. Adapting the governance structure

39. The Working Group has agreed to have two co-chairs because of the increased workload, in general, and the specialized knowledge required in building the Working Group platform, in particular. It has further been agreed that Statistics Denmark and the Office of National Statistics of the United Kingdom will be the co-chairs of the Working Group. The Statistics Division of the Department of Economic and Social Affairs of the Secretariat, as secretariat, will keep the co-chairs informed about all activities of the Working Group.

40. Statistics Denmark will oversee the Working Group's programme of work relating to task teams. The current management team consists mainly of the task team leaders, led by Statistics Denmark. This team has been renamed the committee on global data collaboratives, given that the task teams are functioning as global data collaboratives, and will be chaired by Statistics Denmark. The existing committee on the global platform will continue its work under the leadership of the Office of National Statistics of the United Kingdom. This committee will gradually develop the business case, proof of concept and communications for the Working Group platform, with a focus on its data and technology framework within a federated network of platforms. On a regular basis the Statistics Division will inform the full Working Group membership about the developments led by the two Working Group committees.

41. Two advisory groups are being considered: an advisory group on scientific matters chaired by Statistics Denmark and an advisory group on technology matters chaired by the Office of National Statistics of the United Kingdom. Members of the advisory groups would be invited on a personal basis, determined by their accomplishments and experience in their respective fields. Appropriate terms of reference for the groups and the composition of members would need to be determined. The advisory group on scientific matters would, as one of its first tasks, review the existing handbooks prepared by the task teams on satellite imagery data, mobile phone data and social media data, while the advisory group on technology matters would advise on the set-up of the Working Group platform and the interoperability of the platforms in the federated network.

42. For the progressive detailing of the business case for the Working Group platform based on the experiences of the task teams, the task teams will be asked to elaborate on legal aspects of their data collaboration, such as access to and use of privately owned data, collaboration with the private sector, data integration and the like. Also, the task teams will be asked to elaborate on the financial implications of the operation and maintenance of their data collaboration, including capacity-

building, testing and experimentation in pilot countries. Depending on the progress made by the task teams, specific advisory groups may be established for legal and funding matters.

B. Broadening the tasks of existing task teams and establishing new ones

43. Existing task teams will be requested to broaden the scope of their work by explicitly (a) including the sharing of proprietary data and methods, (b) developing training workshops for participants in developing countries and (c) expanding their partnerships with the private sector. Moreover, tasks teams are expected to start using the Working Group platform and its core services to share information. In light of the new work programme, the tasks teams will be asked to review their terms of reference early in 2018 and report back to the Working Group committee on global data collaboratives.

44. New task teams will be created, notably a task team on the trade data lake led by the Statistics Division, a task team on multisource data led by Statistics Denmark and a task team on data security and encryption led by the Office of National Statistics of the United Kingdom. The Working Group will continue to explore the creation of other teams on thematic issues such as economic and financial statistics, the digital economy and climate change, working with trusted partners. A critical aspect of establishing the new task teams will be to determine, for each, the chair and committed team members who will make their participation part of the regular programme of work within their organizations and who are willing to work using agile development processes with a dedicated approach.

C. Advancing the trusted Working Group platform

45. In 2018–2019 the Working Group committee on the global platform will work, together with the advisory group on technology, to develop a prototype platform whose use will be piloted by the existing Working Group task teams for initial testing. The Working Group platform will be built on a flexible cloud-based infrastructure initially to allow public data, services and applications to be shared as a public good where useful and legally possible.

46. As soon as is feasible, the Working Group platform will be opened up to trusted partners to facilitate the development of trusted data collaboratives. The initial principles and processes for identifying trusted partners will be determined by the committee on the global platform.

47. On the basis of agile development principles, the Working Group platform will be iterated to develop and deliver a marketplace which will offer trusted partners the ability to (a) collaborate among themselves to innovate and explore new data sources, (b) test and share different code, statistical and data science methods, (c) participate in learning and capability-building activities of benefit to their own organizations, (d) choose among a variety of core services and compute and storage solutions (including federating their own compute and storage facilities as part of the platform), and (e) collaborate to agree which data sources, code and methods are considered "trusted", i.e. tested and agreed robust enough for general-purpose use in the delivery of statistics and indicators.

48. Working with the advisory group on technology, the committee on the global platform will seek to develop the necessary technical solutions to extend the Working

Group platform to allow differentiated access to data of different types and classes, by user and use-case, by 2019–2020. This will enable data providers to share more sensitive data, not just public data, in such a way that they can be confident about which users have access to their data and for what purposes. This proof of concept of differentiated access to data and data sharing will be undertaken in close consultation with countries, taking into account their legislative frameworks to allow them to participate in the global network of platforms at a level which suits their local situation.

D. Developing the work programme on trusted learning

49. The four training workshops organized in Bogota demonstrated that the Working Group is able to offer a course curriculum on the use of new data sources for the compilation of official statistics. The courses were conducted with strong support from the members of the Working Group task teams. It is expected that this capacity-building programme will be further developed in 2018, with a number of courses to be conducted at the regional level.

50. There is tentative agreement for a regional training workshop on the use of satellite imagery data for crop and related statistics in the Asia and Pacific region in the second quarter of 2018. The Queensland University of Technology would take the lead, supported by the Statistics Division. A regional training workshop on the use of mobile phone data for official statistics will very likely take place around the third quarter of 2018. Positium would again take the lead, supported by the Statistics Division. The task team on training, skills and capacity-building will confirm these and further activities in due course.

E. Fifth Global Conference on Big Data for Official Statistics

51. It is proposed that the fifth Global Conference on Big Data for Official Statistics be organized by the Working Group in the fall of 2019 in Africa. In the interim, the Working Group will organize one or more sessions on topics related to its work at the United Nations World Data Forum, to be held in October 2018 in Dubai.

F. Renaming of the Working Group

52. Further discussion will take place on renaming and rebranding of the Working Group and its task teams. Alexandre Barbosa suggested in his keynote speech (see para. 34 above) that the name of the Working Group be changed to bring it more into line with the full scope of activities which the Working Group is undertaking. The new name should reflect the two streams of work of the Working Group, namely the global data collaboratives and the global platform. Furthermore, the task teams could be renamed to reflect their theme or statistical domain rather than the data source, as is currently the case.

VII. Points for discussion

53. **The Commission is invited to express its views on:**

(a) **The progress made by the Working Group on Big Data for Official Statistics and its task teams;**

(b) The outcome of the fourth Global Conference on Big Data for Official Statistics;

(c) The proposal for the progressive development, under the auspices of the Commission, of the Working Group platform as a global collaborative for trusted data and metadata, trusted methods, trusted partners and trusted learning servicing the community of official statistics.

Annex I

Membership of the Global Working Group on Big Data for Official Statistics

Countries

Australia

Bangladesh

Brazil

Cameroon

Canada

China

Colombia

Denmark

Egypt

Germany

Indonesia

Ireland

Italy

Mexico

Morocco

Netherlands

Oman

Pakistan

Philippines

Republic of Korea

Saudi Arabia

Switzerland

United Arab Emirates

United Kingdom of Great Britain and Northern Ireland

United Republic of Tanzania

United States of America

Organizations

African Development Bank

Caribbean Community

Economic Commission for Africa

Economic Commission for Europe

Economic and Social Commission for Asia and the Pacific

Eurostat

Global Pulse

International Monetary Fund

Organization for Economic Cooperation and Development

Statistical Centre for the Cooperation Council for the Arab States of the Gulf

International Telecommunication Union

Statistical Institute for Asia and the Pacific

Statistics Division of the Department of Economic and Social Affairs of the Secretariat of the United Nations

Universal Postal Union

World Bank

Annex II

Text of the Bogota Declaration

Taking into consideration the recommendations contained in the report of the Secretary-General's Independent Expert Advisory Group on a Data Revolution for Sustainable Development, entitled "A world that counts: mobilizing the data revolution for sustainable development", including:

(a) Technology, innovation and analysis to establish a network of data innovation networks for leveraging and sharing data and data research;

(b) Capacity-building and resources related to capacity-building and technology transfer, data literacy and resource mobilization through innovative financing mechanisms in partnership with the private sector;

(c) Governance and leadership related to partnerships and coordination between governments, the private sector, non-governmental organizations, the media and academia to promote good practices and principles in data sharing, open data and data rights,

Recalling the adoption of the Cape Town Global Action Plan for Sustainable Development Data (see E/CN.3/2017/3) and the related outcome documents of the regional conferences on the transformative agenda (see E/CN.3/2017/5) by the Statistical Commission at its forty-eighth session in March 2017,

Highlighting that the Cape Town Global Action Plan for Sustainable Development Data calls upon the global statistical community to take action on the strategic area of modernizing and strengthening the national statistical systems with a focus on modernizing the governance and institutional framework; on applying statistical standards and new data architecture for data sharing, exchange and integration; and on facilitating the use of new technology and new data sources in statistical production processes,

The Global Working Group at the fourth Global Conference on Big Data for Official Statistics in Bogota,

Proposes:

- To provide a major thrust for the strategic area of the Cape Town Action Plan on innovation and modernization by advancing global data collaboratives, facilitated by a trusted federated global platform initially for research and development in the discovery, access and use of data, statistical methodology, software applications and capacity-building for the production of statistics and indicators. These partnerships will innovate and help modernize official statistics and their use of new data sources, including Big Data. It will enable data driven transformation in the production of specific statistics or Sustainable Development Goal indicators for better decision making;

- To progressively invest in research and development via task teams of the Global Working Group whose main objective is the innovation of current statistical production processes and the creation of new ways of compiling Sustainable Development Goal indicators; define a framework for the evaluation of the task teams' work centred on the quality of the information produced as well as their cost effectiveness and scale successful projects by transforming them into data products for global consumption;

- To progressively develop the data and technology architecture of the global platform based on the requirements of the work programmes of the task teams

of the Global Working Group, and underpinned by real user demands and business cases;

- That this work programme for trusted data, services and applications is undertaken under the auspices and guidance of the Statistical Commission, in support of the global community of official statistics by putting the national statistical systems of developed and developing countries at its heart;

- That the global platform should build on the best practices of private and public big data initiatives, offer technology infrastructure and a network for data innovation to the official statistical community and address the need for an interconnected and federated network to facilitate:

  (a) The exchange of ideas and methods for processing, analysing and visualizing big data among official statisticians, data scientists and domain experts from the public and private sectors with a focus on research and development building towards modernized statistical production;

  (b) The sharing and exchange of trusted metadata, methods, services and applications for continuous development and reuse, including sharing trusted data where useful and legally possible. The sharing of sensitive data between trusted partners will be agreed bilaterally, while widely applicable open data sources can be generally made available;

  (c) The development, jointly among the official statistical community, private sector technology companies and other communities, of a trusted data architecture so different types of data can be shared safely and securely;

- To support capacity building via a library of trusted training materials and a catalogue of trusted guidance material, methods and software applications and via conducting workshops on big data and new analytical techniques;

Underlines:

- That the implementation of the global data collaborative as a federated system will place the community of official statistics at the heart of modern trusted data usage and information technology;

- That it will offer both developed and developing countries opportunities to realize the benefits of multisource data, including big data, administrative data, census data and survey data, to better understand economic, environmental and societal changes without investment in expensive technologies;

- That the global collaborative for trusted data, services and applications will benefit all parties involved via synergies in sharing methods and data, creating a global culture of best practice and capability sharing;

- That the sharing of knowledge and capacity-building in human resources in the discovery, access and use of multisource data is a shared responsibility of national and international statistical community and should be scaled in existing statistical capacity-building programmes;

Recommends:

- Global collaboration, facilitated by the global platform with the potential to accommodate many different types of trusted data, trusted services and trusted applications, which should:

  (a) Make it easy for all nations to gain value by participating in the global network;

(b) Deliver a marketplace and a flexible cloud-based technology infrastructure to allow trusted data, methods, services and applications to be shared as a public good where useful and legally possible;

(c) Develop transparent partnership agreements with private and public sector organizations so that network partners contribute and derive value through a business model which is individually sustainable for all stakeholders and ensures access to trusted data.

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Item 3 (f) of the provisional agenda*
Items for discussion and decision: regional statistical development

Report of the Economic Commission for Africa on regional statistical development in Africa

Note by the Secretary-General

In accordance with Economic and Social Council decision 2017/228 and past practices, the Secretary-General has the honour to transmit the report of the Economic Commission for Africa on regional statistical development in Africa. The report highlights activities being undertaken in Africa on statistical development, some of which have a global connotation. The report includes methodological works in support of the implementation of the Agenda 2030 for Sustainable Development and Agenda 2063: The Africa We Want. It includes key areas of focus, such as: the Strategy for the Harmonization of Statistics in Africa; civil registration and vital statistics; agricultural statistics; gender statistics; and open data and the data revolution. The Statistical Commission is invited to comment on the work undertaken in the Africa region as well to identify possible areas of collaboration with other regions.

* E/CN.3/2018/1.

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Report of the Economic Commission for Africa on regional statistical development in Africa

I. Introduction

1. The need for high-quality real time data in the design, monitoring and effective evaluation of national, subregional, continental and global development agendas remains a challenge to national statistical systems in Africa. The good news is that new technologies have exponentially increased the volume and the type of data available, creating unprecedented possibilities for informing and transforming societies. Africa should take advantage of innovative and adaptive approaches to better harness the potentials of the new world of data.

2. The present report covers activities being undertaken in Africa on statistical development in term of strategies, methodologies and key areas of focus, while indicating related challenges faced by the African statistical system as well as some key initiatives in support of statistical development in Africa.

3. In concluding, the report proposes key potential actions to be taken by the Statistical Commission in order to scale up international commitment and support for statistical development in African countries in the global context of the 2030 Agenda for Sustainable Development and in the continental context of the Agenda 2063: The Africa We Want.

II. Strategies

A. Strategy for the Harmonization of Statistics in Africa

4. The pan-African institutions, the African Development Bank, the African Union Commission, the Economic Commission for Africa (ECA) and the African Capacity-Building Foundation, are leading a joint effort to revise and update the Strategy for the Harmonization of Statistics in Africa. The main objective of strategy is to harmonize statistics produced in Africa in order to inform the regional integration agenda, as well as Agenda 2063, the 2030 Agenda for Sustainable Development and the "high fives", the pillars of the transformative agenda for Africa. It also aims to operationalize the vision of the African statistical system, which is: "to become an efficient statistical system that generates reliable, harmonized and timely statistical information covering all dimensions of political, economic, social, environmental and cultural development and integration of Africa". This vision will be achieved through the Strategy for the Harmonization of Statistics in Africa, which covers the period from 2017 to 2026. It is anchored on four strategic pillars and is based on the establishment of a strong and operational statistical system for the emergence of an African statistical renaissance. The four pillars are: (a) to produce quality statistics for Africa; (b) to coordinate the production of quality statistics for Africa; (c) to build sustainable institutional capacity in the African statistical system; and (d) to promote a culture of quality decision-making.

5. The Strategy for the Harmonization of Statistics in Africa and its supporting documents (action plan, financing plan and resource mobilization and financing strategies) have been developed through an extensive consultative process involving all African countries, regional economic communities and development partners. The strategy was approved by the Committee of Directors-General of National Statistics

Offices at its meeting in Dakar in March 2017 and was adopted at the meeting of the African Union Conference of Ministers of Finance, Monetary Affairs, Economic Planning and Integration held in Addis Ababa in October 2017. The strategy will be submitted to the African Union Summit of Heads of State and Government in January 2018 for final consideration and adoption.

B. National strategies for the development of statistics

6. National Governments and the international development community have increasingly recognized the essential role that statistics play in development policy and, as a consequence, the need for strategic planning in the development of national statistical systems, particularly in developing countries.

7. The pan-African institutions (the African Development Bank, the African Union Commission, the African Capacity-Building Foundation and ECA) are in the process of promoting the design of national strategies for the development of statistics in Africa. The actions undertaken by pan-African institutions have yielded several significant results, including: (a) the development of a guidebook on mainstreaming sectors into the national strategies, which has been internationally accepted as best practice in the design of such strategies; (b) the organization of regional and continental workshops to build capacity for the development of national strategies and related processes in African countries; and (c) the provision of technical assistance and funding to African countries for the design of their national strategies. In the last few years, assistance has been provided to more than 22 countries[1] to evaluate, design or update their national strategies for the development of statistics or their statistics strategies. Together with other partners, in particular with the Partnership in Statistics for Development in the Twenty-first Century, pan-African institutions have led inter-agency missions to countries to review implementation of their national strategies. In the light of the increased demand for the development of data resulting from the adoption of the Sustainable Development Goals and the new Results Measurement Framework designed by the African Development Bank Group, all African countries and regional economic communities, with the technical and financial support of the pan-African institutions, are aligning their national and regional strategies for the development of statistics with the Strategy for the Harmonization of Statistics in Africa.

C. Development of national spatial data infrastructure

8. As part of its efforts to assist member States to achieve increased levels of socioeconomic development, ECA, together with its partners and other regional initiatives, has been carrying out a number of synergistic actions to promote the development of national spatial data infrastructures along with others national strategies of member States. Those efforts have led to the development, at the regional level, of the African Regional Spatial Data Infrastructure, a cooperative geoinformational management tool for Africa, which aims to leverage the benefits of geospatial science and technology for people-centred, free-market based and export-oriented socioeconomic development.

[1] Including Benin, Botswana, Cabo Verde, Chad, Egypt, Ethiopia, Gabon, the Gambia, Ghana, Guinea-Bissau, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Nigeria, Rwanda, South Africa, the Sudan, Zambia and Zimbabwe.

9. In line with the current recalibration of the ECA business focus, the geoinformational vision is concurrently focused on: (a) advancing holistic geospatial information management and governance; (b) establishing an authoritative repository of development data ("open government" data); (c) auto-empowering African communities in order to increase spatial literacy, spatial awareness and navigational abilities; and (d) mainstreaming the enabling capabilities of geospatial technology into the activities of national statistics offices.

D. Strategic Plans for Agricultural and Rural Statistics

10. In the framework of the action plan of the Global Strategy to Improve Agricultural and Rural Statistics in Africa, and following the priority technical assistance needs identification assessment[2] undertaken in November 2014 by the African Development Bank Group, technical assistance activities have been conducted and are currently ongoing to improve the quality and availability of agricultural data to users. The priority needs identification assessment indicated that, in terms of technical assistance, countries in Africa are in greatest need of the development of Strategic Plans for Agricultural and Rural Statistics. The development of such plans, which rests on the guidelines prepared by the Global Office of the Global Strategy for Improving Agricultural and Rural Statistics and field-tested by the Global Office and the African Development Bank in Burundi, is carried out through a participatory and inclusive process comprising the following four steps: preparation; launching; assessment; and planning. To ensure full ownership of the development process for the strategic plans and its by-products, experts in national agricultural subsectors work together with stakeholders, and national workshops are conducted on the development of the strategic plans, taking in each of these steps in a fully participatory manner.

11. At the request of member States, the African Development Bank provided 24 countries with the necessary technical assistance for the development of their Strategic Plans for Agricultural and Rural Statistics. Plans are under way to involve regional economic communities in the development of the plans, with a view to ensuring that they own the process, build their capacity and help coordinate the process in their respective member countries.

III. Methodological works to support the African statistical agenda

A. Methodological work in support of the 2030 Agenda for Sustainable Development and Agenda 2063

Integrated Regional Indicator Framework Development for the implementation of the 2030 Agenda and Agenda 2063

12. Within Africa, there have been ongoing activities to develop an integrated monitoring and reporting framework for both the 2030 Agenda and Agenda 2063. After different consultations and meetings, a final agreement was reached to use

[2] African Development Bank Group, "Identifying Technical Assistance Needs in Agricultural Statistics in African Countries", February 2015.

140 indicators (of which most are Sustainable Development Goals indicators) for the regional monitoring and reporting on both agendas.

Handbook on the Integrated Regional Indicator Framework

13. The African Centre for Statistics has prepared a Handbook on the Integrated Regional Indicator Framework of Agenda 2030 and Agenda 2063: Concepts and Definitions. An expert group meeting was organized to review the Handbook from 18 to 20 September 2017 in Nairobi. The final version of the Handbook is in the process of being finalized through the incorporation of the comments of the participants at the expert group meeting.

Survey on the availability of economic indicators on the Sustainable Development Goals

14. At the national level, measuring the progress towards the implementation of the Sustainable Development Goals calls for a concerted effort by the national statistical system, coordinated by the national statistical office, to determine how to best carry out the related data collection, processing, compilation, analysis and dissemination activities to meet the needs and requirements of measuring progress towards the achievement of the Goals.

15. In support of the efforts of its member States, ECA conducted a survey on the availability of the tier I Sustainable Development Goal economic indicators and related data sources. The survey revealed that there are significant gaps and discrepancies in the availability of indicators and their respective data sources among the 54 African countries.

16. An expert group meeting was convened inviting representatives of member States to Addis Ababa in November 2017 to meet with representatives from the agencies responsible for reporting on the indicators of the respective Sustainable Development Goals. Country experts presented papers on the practice, experiences and challenges in terms of data collection and processing. Experts from the Statistics Division of the Department of Economic and Social Affairs of the United Nations Secretariat, the International Labour Organization and the International Economic Association introduced methodologies on how to calculate and produce data related to the indicators of the respective Goals. A report on economic indicators related to the Goals in Africa was compiled to summarize the key findings, conclusions and recommendations that emerged from the meeting. The final report was distributed to all countries on the continent.

B. Statistical development indicators

17. In response to the statistical challenges posed to African countries by the increased demand for high quality statistics, stakeholders have taken several initiatives, including a composite index, the African Statistical Development Index, which was initially developed in 2012 by ECA to measure progress in statistical development in Africa. In connection with targets 18 and 19 of Sustainable Development Goal 17, ECA has revisited and improved the methodology of the Index, as endorsed at the fifth session of the Committee on Statistics in Africa in December 2016, held in Grand Bassam, Côte d'Ivoire. The improved version of the Index was presented at an event organized by the Partnership in Statistics for Development in the Twenty-first Century in April 2017, at which participants observed that the methodology of the new version was global in scope since it was based on quality and

strategic frameworks qualifying it for use in other regions and by agencies outside Africa. As a result of this uniquely desirable feature, ECA decided to rename the Development Index: from now on, it will be known as the Statistical Development Indicators (with the acronym StatDI) to allow for its wider applicability.

18. This tool is composed of a sequence of composite indices. Each index measures the statistical development performance prevailing in a dimension or sub-dimension of a national statistical system. By tracking the progress in the different dimensions, the tool can be used to measure the strengths and weaknesses of a given national statistical system. For its operationalization, and to enhance ownership of the tool by member States, ECA is developing a manual and software package, to be reviewed by an expert group meeting. The manual and software, once reviewed, will be presented to the Committee of Directors-General of National Statistics Offices.

C. Agricultural Statistics Capacity Indicators

19. One of the constraints faced in formulating the action plan of the Global Strategy to Improve Agricultural and Rural Statistics in Africa was a lack of comprehensive and up-to-date information on the requisite quality of national capacity to produce agricultural statistics. Accordingly, the need to undertake country capacity assessments was identified as the first critical activity needed for implementation of the action plan. At that end, the African Development Bank developed a country assessment method and related instruments to measure the capacity of African countries to produce agricultural statistics. The method was field-tested in Ghana, Rwanda, and Uganda. In all, four dimensions of national agricultural statistical systems are assessed, namely: (a) institutional infrastructure (prerequisite dimension); (b) resources (input dimension); (c) statistical methods and practices (throughput dimension); and (d) availability of statistical information (output dimension).

20. The report on the country assessments carried out in 2016 shows that there is an improved overall performance of national agriculture statistical systems in Africa, with a general increase of 6.4 per cent in their capacities to generate more and better national agricultural statistics. It further highlights those countries that have shown signs of improvement in their capacity to produce relevant agricultural statistics, as well as those exhibiting some weakness. Data for 27 countries have been already uploaded to the website of the African Development Bank Group website (see http://dataportal.opendataforafrica.org/data#topic/MSCD).

IV. Primary areas of focus

A. Civil registration and vital statistics

A continental institutional framework and programme

21. Civil registration and vital statistics in Africa are being complied through the Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics, based on the policy and programmatic guidance provided by the African ministers responsible for civil registration through the resolutions adopted at the first three Conferences of African Ministers Responsible for Civil Registration. The Conference has been institutionalized as a standing forum of the African Union Commission.

22. The regional civil registration and vital statistics programme is buttressed by the regional core group formed by the key actors in this field on the continent, the pan-African institutions, United Nations agencies and non-governmental organizations, working together within a common framework, and the above-mentioned Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics. Set up in 2011, the core group is intended to harmonize approaches, harness synergies and work to avoid duplication of efforts, as well as to provide technical and financial support to the Africa Programme. The core group arrangement is being formalized through a memorandum of understanding, which will ensure a more sustainable engagement by partners in the implementation of the Africa Programme.

African Symposiums on Statistical Development as vehicle for advocacy

23. One of the key activities promoting the collaboration of actors in the field of civil registration and vital statistics at the country level (mainly statistical offices and civil registration offices) were the last five African Symposiums on Statistical Development, which had civil registration and vital statistics as their main focus. At the eleventh Symposium, the last one dedicated to the improvement of civil registration and vital statistics, the Directors-General of national statistical offices and civil registration offices of African States committed themselves to establishing a commission of registrars general at the continental level. The task force meeting to prepare for the establishment of such a commission was held in Victoria Falls, Zimbabwe, from 17 to 20 October 2017.

Partnership

24. The partnership on civil registration and vital statistics is composed of multiple developing partners, whose mandates are to help countries improve performance in this field and achieve the goals of the African Civil Registration and Vital Statistics Decade 2017–2026. Coordination between the secretariat of the Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics and developing partners is fundamental for the organization of the activities in this field and for the implementation of the strategic plan for the Africa Programme (2017–2021), as well as other related endeavours in African countries.

Progress and challenges

25. Responding to the call in the declaration of the second Conference of African Ministers Responsible for Civil Registration, held in Durban, South Africa, to "Develop results-based monitoring and evaluation systems and tools to monitor and report on progress on civil registration and vital statistics", the secretariat of the Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics developed a framework to document and monitor progress made by member States in the improvement of such systems. The monitoring report was prepared based on web-based monitoring results to an online review conducted by the secretariat of the Africa Programme in October 2016 to measure the progress achieved by the national statistics systems of each country. The report presents summary of the findings based on responses obtained from 39 countries out of the 54 member States that were requested to fill in the online monitoring form — a response rate of 72 per cent.

1. Rapid and comprehensive assessments and strategic plans

26. According to the monitoring report, more than half of the countries in Africa have conducted rapid and comprehensive assessments, some have developed strategic plans and few of them have begun to implement their strategic plans. Despite the remarkable progress achieved in the past few years, there remain a number of major challenges facing African civil registration and vital statistics systems.

2. Legislation

27. All countries in the region, except South Sudan, have laws and legal provisions for civil registration. However, in many countries existing laws are outdated and not aligned with recommended international standards. In more than one third of the countries, the civil registration law does not distinguish between late and delayed registration. For example, registration of marriage and divorce are not compulsory in many countries. The monitoring results showed that divorce registration is compulsory only in 17 out of the 39 countries that responded to the review. Nearly half of the countries (46 per cent) have no legal provision for transferring data from civil registration offices to government agencies in charge of compiling national vital statistics and producing annual reports.

3. Budgetary allocation

28. National governments allocate a budget line for the maintenance of the civil registration system. Nonetheless, monitoring results show that, in more than two thirds of the reporting countries, budgets are either inadequate or irregular. In five countries, the government does not make budgetary allocation for the civil registration system. Only 11 countries (28 per cent) have adequate human resources at all levels of their civil registration systems, yet in the case of 27 countries (67 per cent) human resources are inadequate at the local registration offices. More than half of the countries have no routine training schedule for civil registrars, and training sessions are conducted occasionally on an ad hoc basis.

4. Coordination

29. Nearly three quarters (74 per cent) of African countries have established high-level coordination bodies to provide oversight and guidance for national civil registration and vital statistics systems, but in half of those countries the coordination system is not effective. Although many countries have a formal inter-agency committee to facilitate these operations, collaboration remains insufficient.

5. Computerized civil registration systems

30. One third of the 39 reporting countries capture birth and death records electronically at all local registration offices. Only few countries employ mobile phone technology to notify birth and death occurrences at home or in health facilities. The monitoring results reveal that 29 out of the 39 countries have a national identification database and that 20 countries maintain a computerized database of civil registration records. However, the two systems are interoperable in only 13 countries.

Conclusion

31. There is a need to pay particular attention to the five poorly functioning components of civil registration and vital statistics systems for most of the countries.

budgeting and human resources; coordination and monitoring; the use of information and communications technology and digitization; recording of the cause of death; and the production of vital statistics from civil registration data.

B. Population and housing censuses

Preparation for the 2020 round of population and housing censuses in Africa

32. ECA undertook an assessment on country preparedness for the 2020 round of population and housing censuses in Africa with a view to building institutional capacity in African countries in conducting the 2020 round. The purpose of the assessment included but was not limited to: (a) determining the current status of countries preparedness for the 2020 round of population and housing censuses, and establishing their major challenges best practices and key considerations for the 2020 census; (b) identifying country preparedness gaps; and (c) ensuring that in the 2020 round the data collected are relevant to national, regional and international policy, planning and reporting requirements.

33. An expert group meeting was organized in Nairobi from 19 to 22 July 2016 on the subject of the third African addendum to the *United Nations Principles and Recommendations on Population and Housing Censuses*. Subsequent, to that meeting, the African coordinating committee for the 2020 round of the census was also established.

34. The African Centre for Statistics and the Statistics Division co-organized the United Nations Regional Meeting on Disability Measurement and Statistics in support of the 2030 Agenda for Sustainable Development and the 2020 World Population and Housing Census Programme, held in Kampala, from 15 to 17 November 2016 as part of a series of regional meetings with the following objectives: (a) to review and discuss national experiences, including challenges faced and lessons learned, to measure the population with disabilities during censuses of the 2010 round; (b) to provide an opportunity to discuss strategies for the compilation of data on disability for the monitoring of Sustainable Development Goals; and (c) to foster intraregional cooperation aimed at enhancing national capacity in disability measurement and improving the quality of data for monitoring the Sustainable Development Goals. The two United Nations entities are planning to organize a regional meeting in the United Republic of Tanzania in February 2018. The African Centre for Statistics and the Statistics Division also co-organized the United Nations Regional Workshop on the 2020 World Programme on Population and Housing Censuses: International Standards and Contemporary Technologies, held in Lusaka from 20 to 23 March 2017.

C. National accounts

35. As part of the African project on the implementation of the 2008 System of National Accounts (SNA) and to support countries in compiling, revising, updating and applying supply-use tables for economic policy research and analysis, ECA, jointly with the World Bank, the Organization for Economic Cooperation and Development and the World Trade Organization, initiated a capacity-building programme on the compilation of supply-use tables in Africa. Despite the importance and usefulness of such tables, about half the countries in Africa have not yet compiled them.

36. The capacity-building programme consists of a series of activities in three phases: an e-training module; a face-to-face seminar; and follow-up national workshops and on-site technical assistance. The main reference materials used for the e-training include the three ECA handbooks guidebooks: a handbook on supply and use tables; a guidebook on using administrative data in national accounts; and a guidebook on accounting for the informal sector in the compilation of national accounts.

37. Over 300 participants from 41 countries participated in the above training sessions. Among the participants, over 100 registered for a final assessment, demonstrating their confidence and commitment to higher quality national accounts statistics, which are essential for economic analysis, policymaking and monitoring and reporting on the Sustainable Development Goals.

38. Technical and advisory support was extended to a number of countries, upon their request, to strengthen the capacities of member States in the implementation of the 2008 SNA and to improve their national accounts and national statistical systems. Technical missions were undertaken in Equatorial Guinea, Liberia, Mauritania and Togo and on the rebasing of the gross domestic product (GDP). The expected outcome of those missions is enhanced capacities in the production and dissemination of national accounts according 2008 SNA and economic statistics.

D. Environmental statistics and accounting

39. There is a lack of related technical capacity in many countries in terms of data collection, processing, compilation, analysis and dissemination of environment statistics. To meet the challenges, ECA collaborated with the Statistics Division and the UNEP to initiate a capacity-building programme on environment statistics in Africa. The programme was aimed at raising awareness regarding the urgent need for environment statistics in current policymaking and development planning process, as well as for the development of technical expertise in the production of environment statistics in African countries.

40. In June 2017, an e-training, led by the Statistics Division using the ECA platform, was employed for a discussion of the Framework for the Development of Environment Statistics 2013. The 2013 Framework was endorsed by the Statistical Commission at its forty-fourth session for the strengthening of environment statistics programmes in Member States. The Framework is a multi-purpose conceptual and statistical configuration that sets out the scope of environment statistics and provides an organizing structure to guide data collection and compilation at the national level. More than 200 participants from 37 African countries registered and participated in the e-training programme.

41. Following the e-training, a face-to-face seminar was held in September 2017 in Kenya. The face-to-face seminar has: deepened the technical knowledge and skills of all participants in producing, processing, compiling and disseminating environment statistics based on the 2013 Framework; given a clear vision of the process for the mainstreaming of environment statistics in a national context; equipped participants with the ability to design and implement national action plans on environment statistics; and enabled countries to establish a foundation for environment statistics through the production of a compendium of environment statistics.

42. Based on the positive experience with the 2013 Framework, a similar approach will be adopted to support countries in building natural capital accounts in line with the System of Environmental-Economic Accounting (SEEA).

E. Gender statistics

43. Stakeholders working in the field of gender statistics have been actively working in different strategic areas to achieve the objectives of the African Group on Gender Statistics. The main results include: (a) the development of a handbook for gender mainstreaming in African official statistics by ECA; (b) an online training toolkit on gender statistics; (c) a process for the development of a joint gender index from the African Gender and Development Index of ECA and the Africa Gender Equality Index of the African Development Bank; and (d) production of a gender statistics toolkit on women in the informal cross-border trade in Africa.

44. Activities undertaken on training in gender statistics include: (a) a regional training workshop to improve use of existing data for the monitoring of gender equality and women's empowerment in Africa; (b) a regional training workshop on the online gender statistics toolkit; (c) a workshop on "Measuring women's representation in local government in the ECA region"; and (d) a national training workshop on gender statistics in Uganda. Other key studies are described below.

Women's economic empowerment: boosting female entrepreneurship in Africa

45. A report has been initiated, which includes: quantitative research into the subject of women's economic empowerment; the profiling of female entrepreneurs; cataloguing of the constraints they face; and an investigation of gender gaps in productivity in five selected countries, including subregional representation (Angola, Cameroon, the Democratic Republic of Congo, Egypt and Mali). The key premise of the report is that elevating the productivity of self-employed women is fundamental to their economic empowerment, and has strong links to their social and political empowerment.

African Women's Report: 2016–2017

46. A study on the theme "Securing women's rights to social protection in Africa" was undertaken during the biennium 2016-2017, with the goal of documenting the constraints facing women and girls in gaining access to quality social protection services in Africa. The study used a two-pronged approach involving in-country empirical studies in five selected countries, namely Chad, Kenya, Namibia, Mauritania and Senegal, representing ECA's five subregions. The empirical research, which was combined with secondary research covering all African countries, resulted in a regional synthesis research report, which provided a cross-country analysis of the impediments to securing women's access to quality social protection services.

The African Union Commission: the African Gender Scorecard

47. In 2015, the African Union Commission, supported by ECA, published the first African Gender Scorecard. The Scorecard is a simple yet comprehensive tool whose main goal is to provide the African Union Commission and its member States with an implementation mechanism, as well as a monitoring and accountability tool, to achieve the key objectives of Agenda 2063 from a gender perspective.

F. Implementation of the action plan of the Global Strategy to Improve Agricultural Food Security and Rural Statistics

Technical assistance

48. To help African countries improve and strengthen institutional, organizational and technical capacities for the development of their national agricultural statistical systems, a technical assistance component has been developed as part of the action plan of the Global Strategy to Improve Agricultural Food Security and Rural Statistics in Africa. The technical assistance component is structured around following four elements: (a) the development of institutional and organizational capacities; (b) the design of strategic plans for agricultural and rural statistics as an integral part of the national strategy for the development of statistics; (c) the development and harmonization of data sources; and (d) data harmonization and management.

49. The technical assistance component is being implemented by the African Development Bank across the continent, and mechanisms have been put in place for accelerating and scaling up related activities to achieve the objectives of the action plan. At the outset of the implementation period for the action plan, the Bank has assisted countries in assessing their capacity to produce agricultural statistics, build a strong and sustainable institutional framework and foundation for agricultural statistics and identify their priority technical assistance needs. This has been done and achieved through: (a) country assessments of the development of national agricultural statistical systems (undertaken in 2014 and 2016); and (b) the development of national Strategic Plans for Agricultural and Rural Statistics (completed for 24 countries thus far).

Training

50. ECA is responsible for the execution of the training component of the "action plan for Africa". The purpose of the training component is to strengthen the capacity of the agencies concerned with the collection, consolidation and use of agricultural statistics. The methodology employed will be to increase the knowledge, skills and competencies of their staff. Emphasis will also be placed on strengthening and sustaining the capacity of statistical training centres to develop and to deliver quality training in agricultural statistics and statistics-related subjects.

51. To date, over 85 various training materials and syllabuses have been produced on topics pertinent to agricultural statistics; over 72 scholarships have been provided for master and post-graduate level studies in the field of agricultural statistics for students and experts from national statistical offices and ministries of agriculture. To ensure that partners, stakeholders and beneficiaries of the training components are kept informed about the state of affairs with regard to the implementation of these activities, ECA produces a quarterly newsletter and disseminates it widely.

G. Revolutionizing data management and dissemination in Africa

52. In 2012, the African Union Summit of African Heads of State adopted a resolution calling on the African Development Bank, ECA and the African Union Commission to urgently support the efforts of countries to improve data management and dissemination systems. Following this directive, the African Development Bank launched the Africa Information Highway initiative, which involved installing open data platforms in all 54 African countries and 16 regional and subregional

organizations in order to facilitate data collection, management and dissemination. Live data links were established between the African Development Bank and national statistical offices, central banks and line ministries on the one hand, and development partners, international organizations and other users, including the general public and the private sector, on the other.

53. One key feature of the Africa Information Highway is its full compliance with the standards of statistical data and metadata exchange so as to facilitate easy data exchange within and across countries and between partner institutions. In this regard, the African Development Bank has been working closely with the International Monetary Fund (IMF) to facilitate the reporting of macroeconomic data from African countries to IMF using the statistical data and metadata exchange protocols. This approach has now been extended to data reporting on the Sustainable Development Goals following the launch, in 2016, of the Sustainable Development Goal data hubs as part of the Africa Information Highway. All African countries now have a fully statistical data and metadata exchange-compliant Sustainable Development Goals data hub that they will use for managing, exchanging and reporting their data relative to the individual Goals.

54. The overall objective of the Africa Information Highway initiative is to significantly increase public access to official and other statistics across Africa, while at the same time supporting African countries to improve data quality, management and dissemination. The initiative also responds to the demand of the African Development Bank for timely data to inform its results measurement framework, facilitate the monitoring of the development impact of the interventions of the African Development Bank on the continent and ensure that these are in line with its "high fives" transformation agenda for Africa (information on the Africa Information Highway initiative can be accessed at http://dataportal.opendataforafrica.org).

H. Geographical information in Africa

Strategic framework for the integration of statistical and geospatial information in Africa

55. ECA is developing a global strategic framework for the integration of statistical and geospatial information in African countries. The strategy outlines some of the policy principles on how to mainstream geospatial technology into the work of statistical offices through training, data and processes. The strategy includes a deconvolution mechanism to help break down the framework at the national level so that Member States can adopt, adapt and apply their own national statistical spatial frameworks based on the prevailing environment and realities in each country. It is expected that the integration of statistical and geospatial information will benefit Member States in providing services that are of the greatest value to users, with a particular focus on the 2030 Agenda for Sustainable Development, the Agenda 2063, the 2020 round of censuses and national regional priorities.

Geospatial information for sustainable development in Africa: an African action plan on global geospatial information management

56. ECA has led the development of an African action plan on global geospatial information management, which created new partnerships with national officials in all geospatial fields as well as non-governmental organizations, academia, research institutions and the private sector. The action plan conceptualizes the overarching principle of holistic geospatial governance that strengthens the significance of

geospatial information for the achievement of the Sustainable Development Goals in Africa. It outlines the essential actions with related responsibilities, timescales and costs that will steer the future implementation of the initiative in Africa. Through the action plan, Member States have agreed on a basic set of concepts, practices, standards and guidelines for the development and management of geospatial information in Africa.

Geospatial information management support for the achievement of the Sustainable Development Goals

57. In supporting the implementation and reporting on the Sustainable Development Goals, ECA has developed a matrix identifying the geospatial datasets that are labelled according to the critical need for the monitoring and implementation of the indicators of each Sustainable Development Goal. This work is ongoing and will be aligned with the activities of the Inter-Agency and Expert Group on the Sustainable Development Goal Indicators Working Group on Geospatial Information.

I. Promoting the use of mobile technology in data collection

58. ECA is implementing a project on the use of mobile technologies to collect data. The project is funded under the Development Account and will be implemented in two phases so that the results of phase I can be incorporated into the findings for the roll-out of the methodologies to phase II countries. The main objective of the project is to improve the capacity of countries in using mobile technology to make statistical data available and accessible in order to support evidence-based policymaking. It is implemented through a series of pilot projects involving six countries in phase I (Cameroon, Ethiopia, the Gambia, Kenya, Tunisia and Zimbabwe) and an additional five in phase II (Egypt, Gabon, Lesotho, Mali and Uganda).

59. The pilot projects are designed to be executed by each country's national statistical office, in collaboration with a national training and research institute designated by the national statistical office. The training and research institutes, in collaboration with the national statistical offices, are expected to undertake applied research to adapt and develop appropriate concepts, systems and methodologies for the use of mobile technologies in data collection and the integration of the collected data into standard statistical processes. Another aspect of the project is the concept of the "citizen as data collector". The objective is to develop procedures and tools that enable citizens or institutions, untrained in statistics, to submit data on their activities for the production of statistics.

60. Overall, phase I of the Development Account project was successfully carried out by all pilot countries. They have all developed in-house capacity and gained skills and confidence in using mobile technology in data collection. However, in many pilot countries, financial resources remain the main obstacle for the sustainability of the data collection process, with mobile devices beyond the financial reach of the project. Phase II of the project was launched with an inception workshop, held in Yaoundé from 7 to 9 March 2017, which brought together phase I and II countries. While phase I countries all focused on the consumer price index survey to develop their application, phase II countries are focusing on different surveys, such as the survey of the civil registration system, the community information system and the manufacturing and higher institution survey; all countries will experiment with self-enumeration.

J. Implementing the data revolution in Africa

Strategy for the Harmonization of Statistics in Africa as a vehicle for the data revolution on the continent

61. Within the framework of Strategy for the Harmonization of Statistics in Africa, African countries consider that the data revolution will be conducted by a unified Africa. It is in this regard that they gave a mandate to pan-African institutions and to the African Union Institute for Statistics to pilot this road map. Substantively, it is about elaborating and implementing the African pact on the data revolution. This pact will be an integral part of the implementation of the Strategy for the Harmonization of Statistics in Africa.

62. The countries of Africa were some of the most active participants in the "Informing a data revolution" project carried out by the Partnership in Statistics for Development in the Twenty-first Century in 2014 and 2015. The project covered 13 African countries (Botswana, Burundi, Cabo Verde, the Democratic Republic of Congo, Gabon, Ghana, Malawi, Mali, Mozambique, Nigeria, Senegal, South Africa and Uganda) of which three (Burundi, Cabo Verde and the Democratic Republic of Congo) participated in the in-depth studies organized by the secretariat of the Partnership. Taking into account the realities and challenges of the African statistical system, the project developed a road map for a country-led data revolution, which was also adopted at the global level. The road map proposes an implementation approach that was accepted by all stakeholders working in the field of statistics at the national and international levels.

63. A high-level conference on the data revolution in Africa was held in March 2015 as a side event at the eighth annual African Union-ECA joint conference of ministers of economy, planning and finance. The meeting was organized in response to the request of the Heads of State and Government at the twenty-third African Union Summit held in Malabo in July 2014. The ninth annual session of the African Union Committee of Directors Generals of National Statistics Offices discussed the Africa Data Consensus, the outcome of the high-level conference on the data revolution in Africa, contains the core principles on which the data revolution will become a reality in Africa. At the ninth annual session of the African Union Committee of Directors Generals it was concluded that: all discussions on the data revolution should be under the auspices of the United Nations at the global level and under the auspices of the African Union for continental matters; and further guidance was provided including the data revolution in Africa as an emerging theme in the revision of the Strategy for the Harmonization of Statistics in Africa.

K. African Statistics Day, 18 November

A long-standing initiative

64. Since the 1990s, African Statistics Day has been celebrated annually on 18 November. It is a continent-wide event and one of the most visible and widely observed occasions to promote an awareness of the importance of statistics and of data-driven policies and researches in Africa. African Statistics Day has generated widespread interest and coverage not only on the part of members of statistical communities, but also from journalists and the general public. Many countries have organized celebrations beyond the standard arrangement of a day-long workshop and

seminars, to include elementary schools, college classrooms, media and other public arenas in order to broaden statistics and data familiarity among teachers and students.

L. Africa Symposium on Statistical Development

65. The annual Africa Symposium on Statistical Development, launched in January 2006, is a country-led initiative organized in African countries on a rotational basis. It provides a forum for the discussion of issues pertaining to statistical development and a platform for the exchange of practical experiences and best practices among African countries. The Symposium assembles representatives of all major national stakeholders, including the heads of national statistical offices, economic and finance ministries and central banks, representatives of international and regional organizations and development partners.

66. The first six Africa Symposiums on Statistical Development focused on the 2010 Round of Population and Housing Censuses. Since then, all but four African countries have successfully undertaken the censuses. The next five symposiums made a big push for the development of civil registration and vital statistics in Africa. Following this push, more than half of African countries have made significant progress towards the development of data collection of these statistics. At the eleventh Africa Symposium on Statistical Development, held in Libreville, Gabon, in 2015, a resolution was adopted that shifted the focus area of the symposiums from civil registration and vital statistics to economic statistics and national accounts for the next five symposiums, beginning in 2016.

V. Actions to be taken by the Statistical Commission

67. **The Statistical Commission is invited to:**

(a) **Take note of the ongoing progress made by African countries, pan-African institutions and other development partners in support of statistical development in Africa towards the implementation of national, continental and global development agendas;**

(b) **Call upon African countries to mainstream statistical strategies into national development plans and budgeting processes;**

(c) **Discuss the importance of giving high priority to statistics in supporting evidence-based decision-making processes and the need to allocate adequate financial resources for the implementation of national statistics programmes;**

(d) **Call upon development partners to scale up their support to the African statistical system in the implementation of the Strategy for the Harmonization of Statistics in Africa.**